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Vol. XI., No. 4. *

SHANGHAI—MANILA

* September, 1914.

Extension of Telephones in China

A New Installation at Changsha

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The Development of Dairen

An Experimental Bean Mill

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The Chinese Domestic Loan

River Conservation in China

The Fisheries of Mindanao and Sulu

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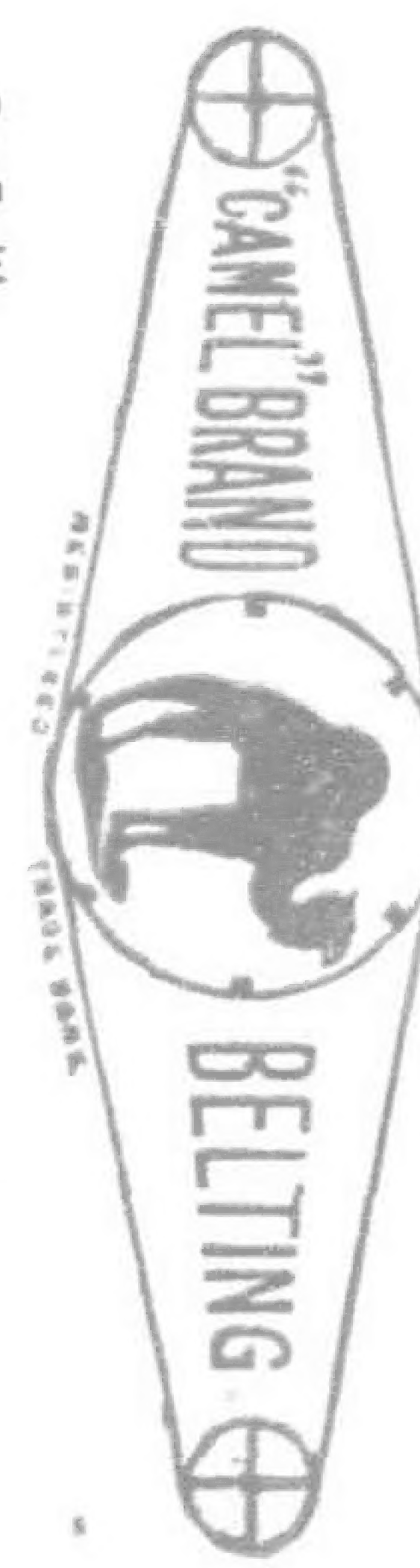
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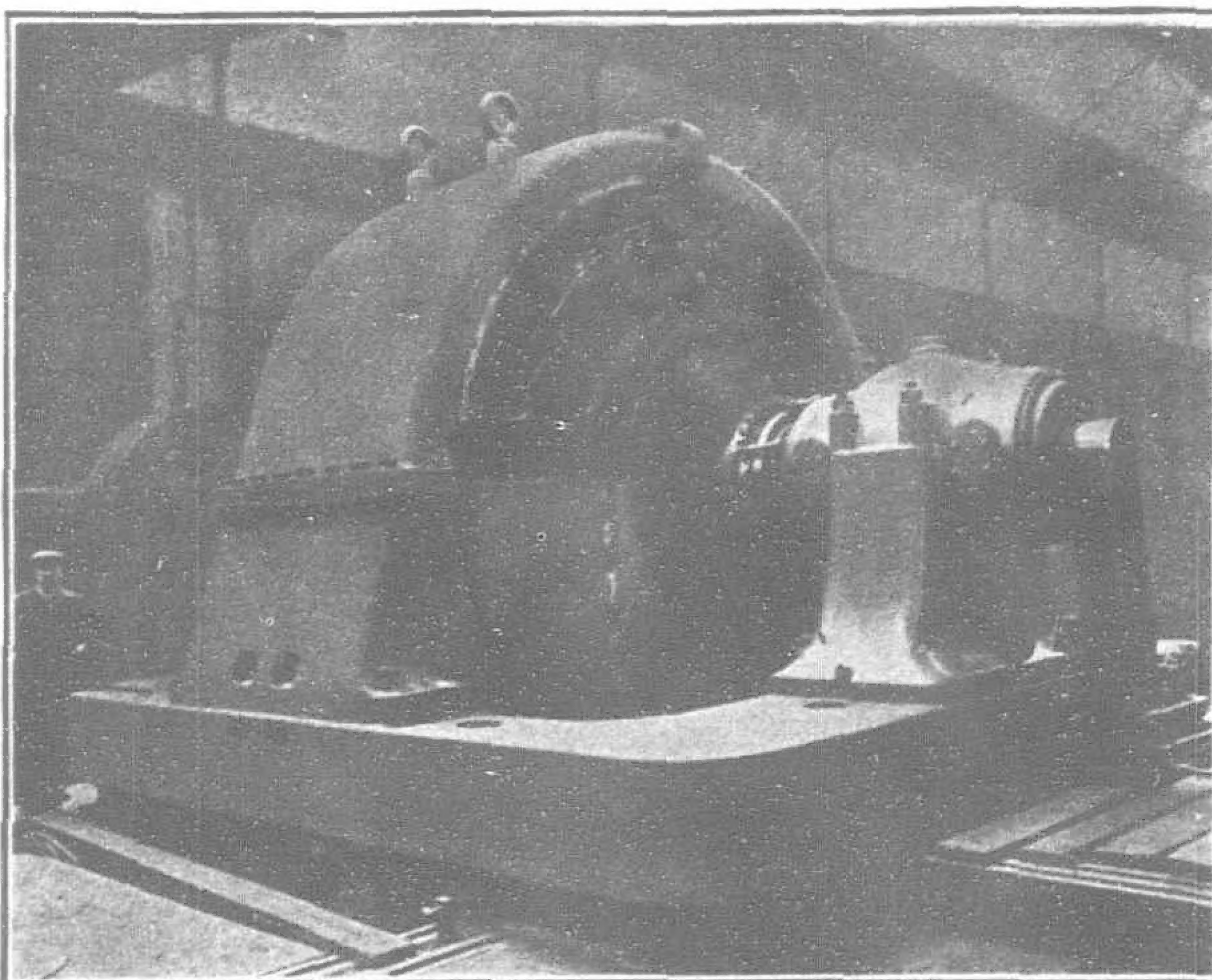
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THE FAR EASTERN REVIEW

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SHANGHAI AND MANILA, SEPTEMBER, 1914

No. 4

NEW TELEPHONE SYSTEM AT CHANGSHA

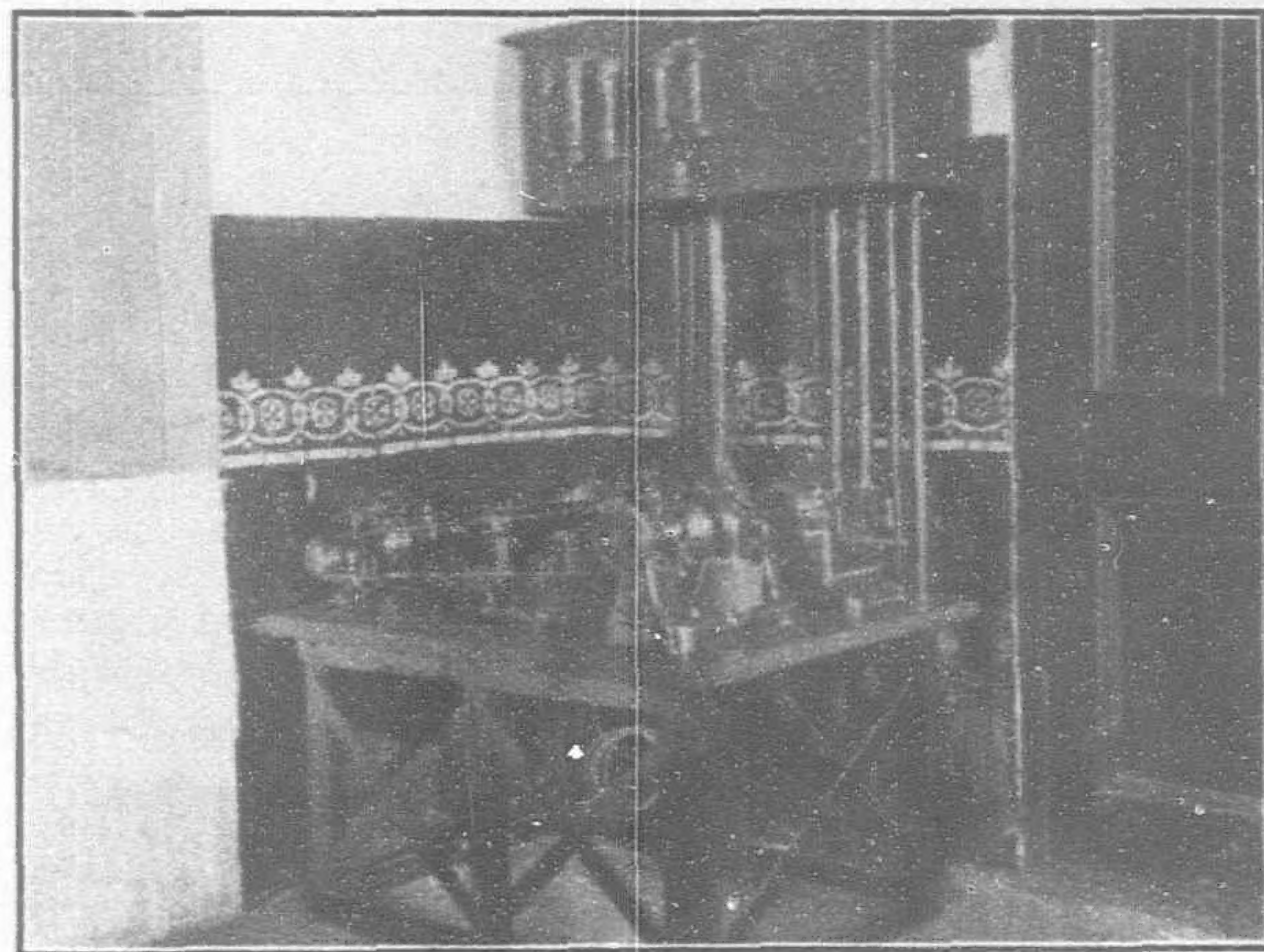
That the telephone industry in China is developing rapidly is indicated by several new and modern telephone installations that have been completed recently in various cities. The Chinese have realized the advantages and conveniences of the telephone

The new system replaces the old system which was the magneto type equipped for 350 lines. The accompanying illustration shows the switchboards of the old system.

To accommodate the central office equipment of the new



New Telephone Building at Changsha.



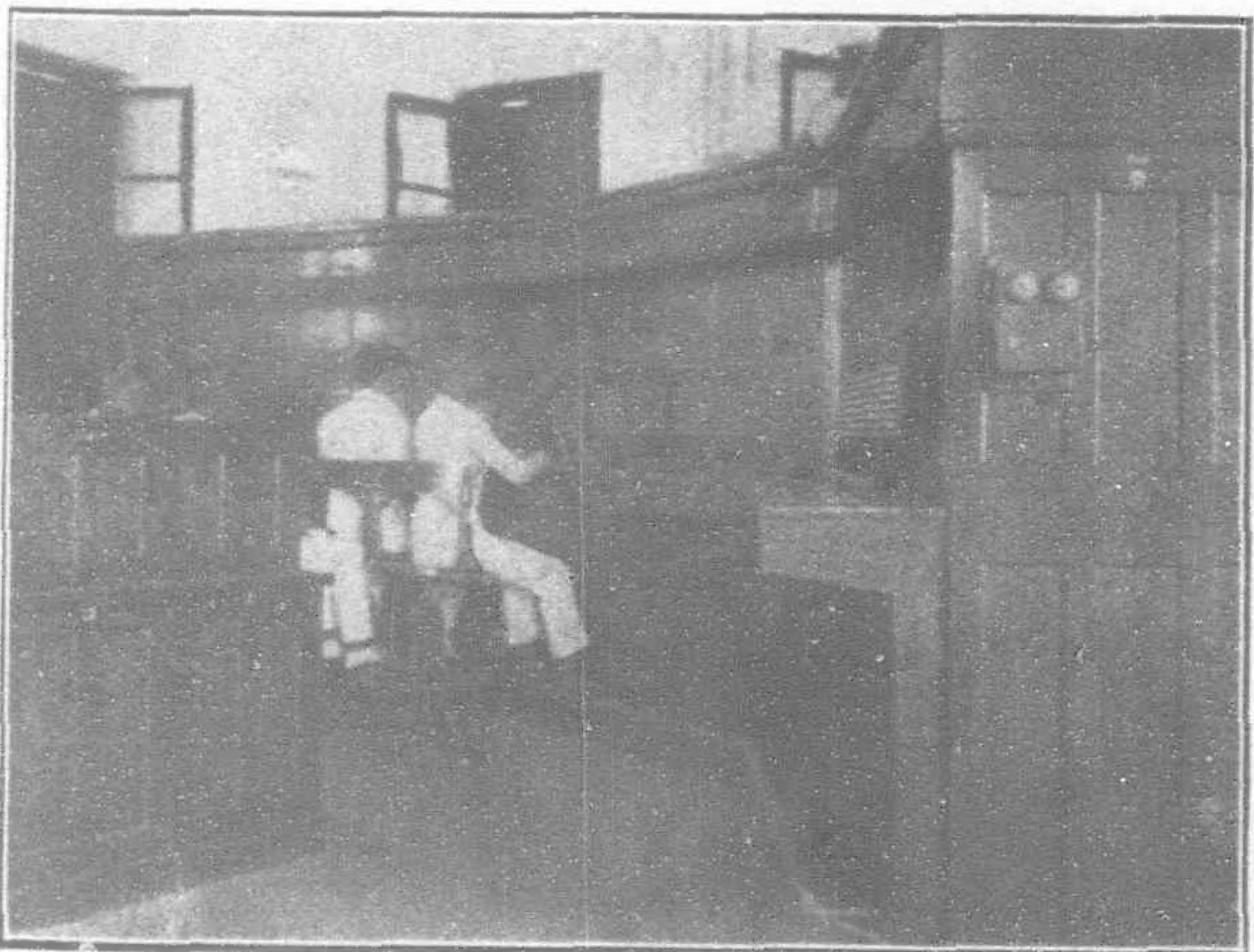
Ringing Machines and Battery Panel.

for Government as well as commercial uses and also are beginning to recognize that telephone systems, properly designed and managed, are paying propositions.

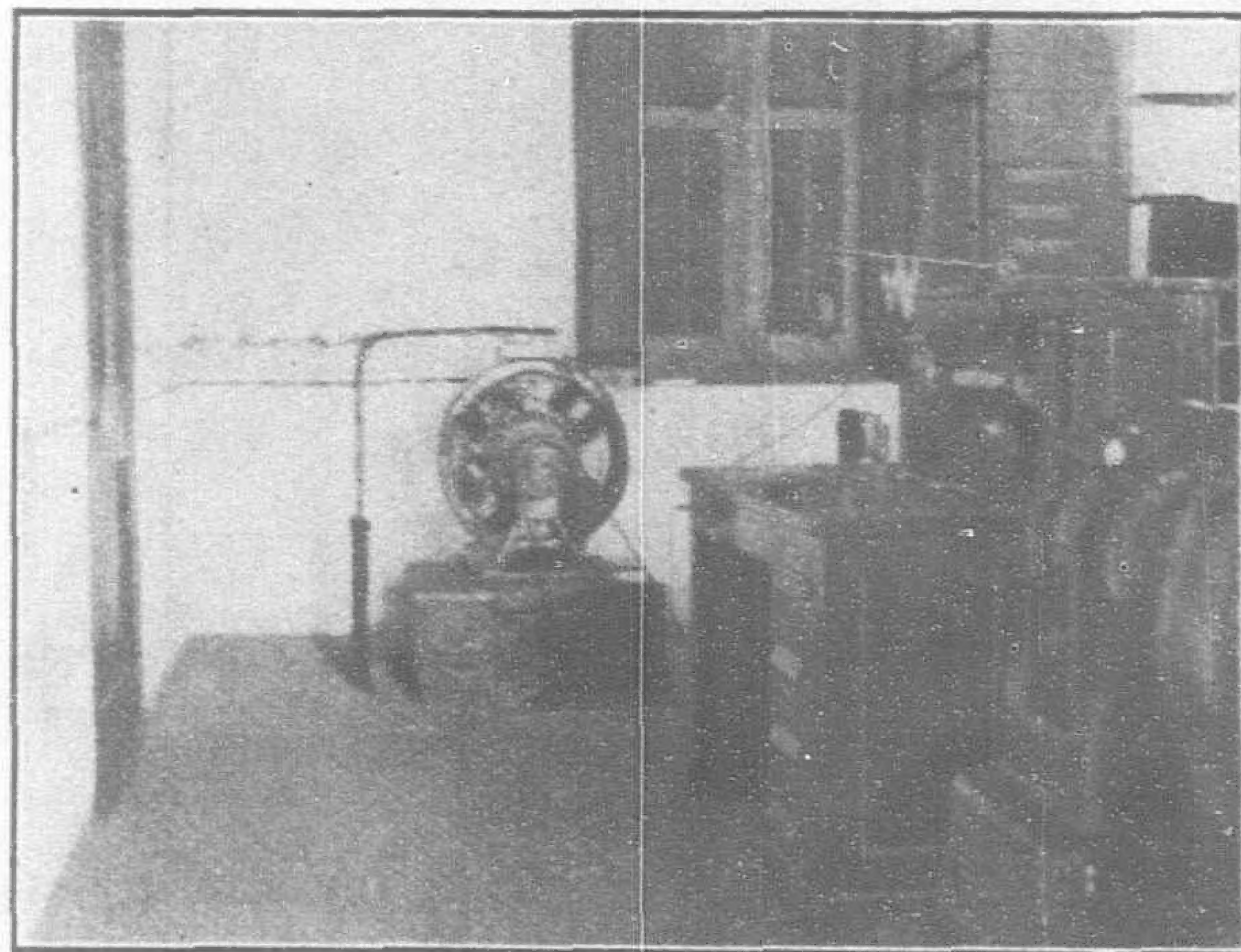
At Changsha a new and modern system has been completed. It is the Western Electric Company's No. 1 central battery type

system a modern brick building was constructed. The accompanying illustration shows this building in course of construction. It was designed especially to meet the needs of the equipment to be furnished.

The switchboard consists of three 6-panel sections, each



New Central Battery Telephone Switchboard at Changsha.



Charging Machines and Wire Chief's Desk.

with lamp signals. It has a present equipment for 1,000 local lines and 40 toll or long-distance lines, and is arranged for an ultimate capacity of 3,000 lines, equipment for which may be added in the future as desired.

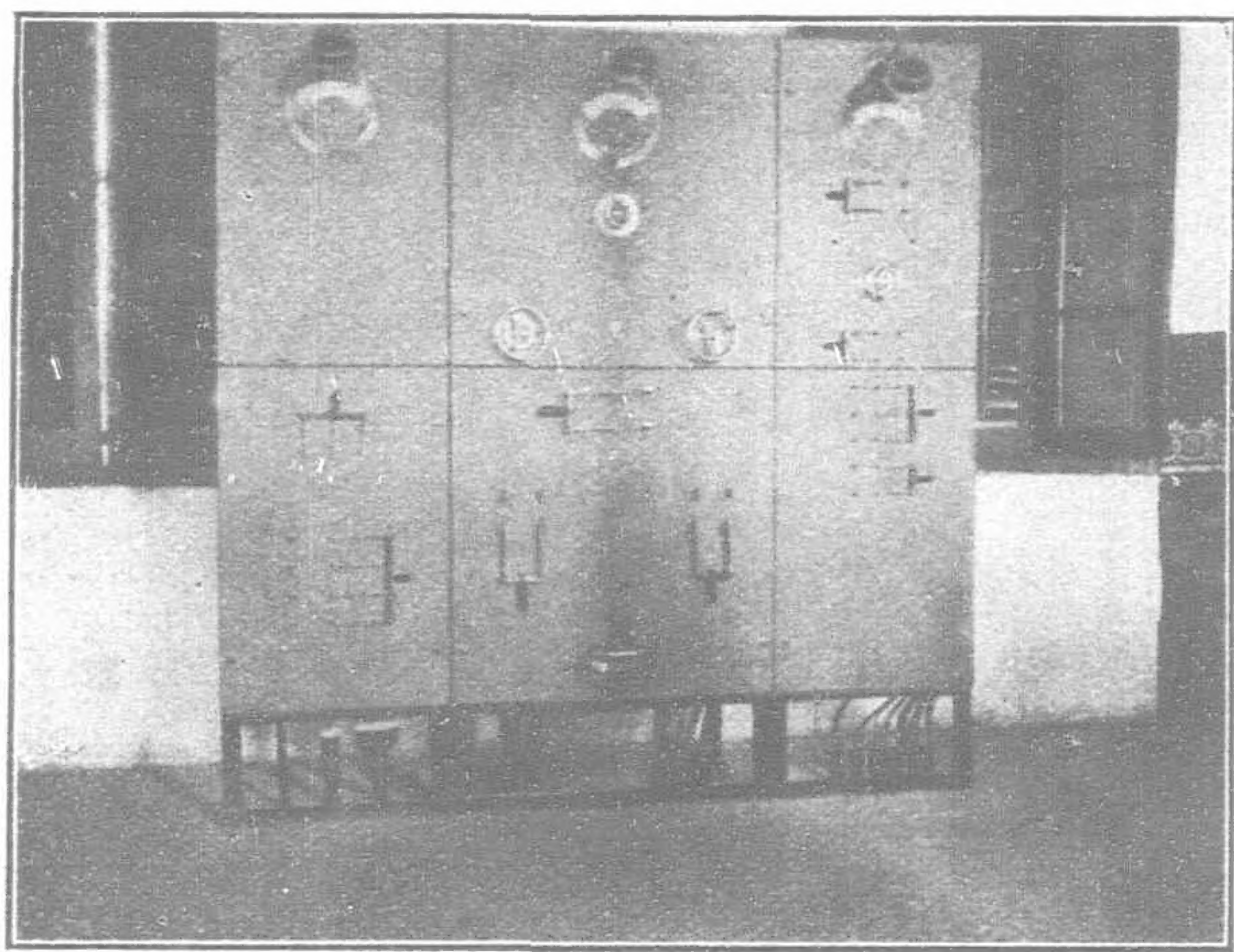
section having a capacity for 480 answering jacks with lamps and 3,000 multiple jacks. Each section is arranged for three operator's positions and each operator's position is equipped with fifteen pair of cords and plugs for making

the connections between the subscribers. One position of the switchboard is equipped with toll-switching trunks for making connections between toll lines and local lines. The multiple jacks are so arranged throughout the three sections of switchboard that each operator can reach any one of the 3,000 multiple jacks, into which the operator must insert the calling plug for calling the desired subscriber. The switchboard is so arranged that additional sections may be added easily in the future to take care of an increase in the number of subscribers.

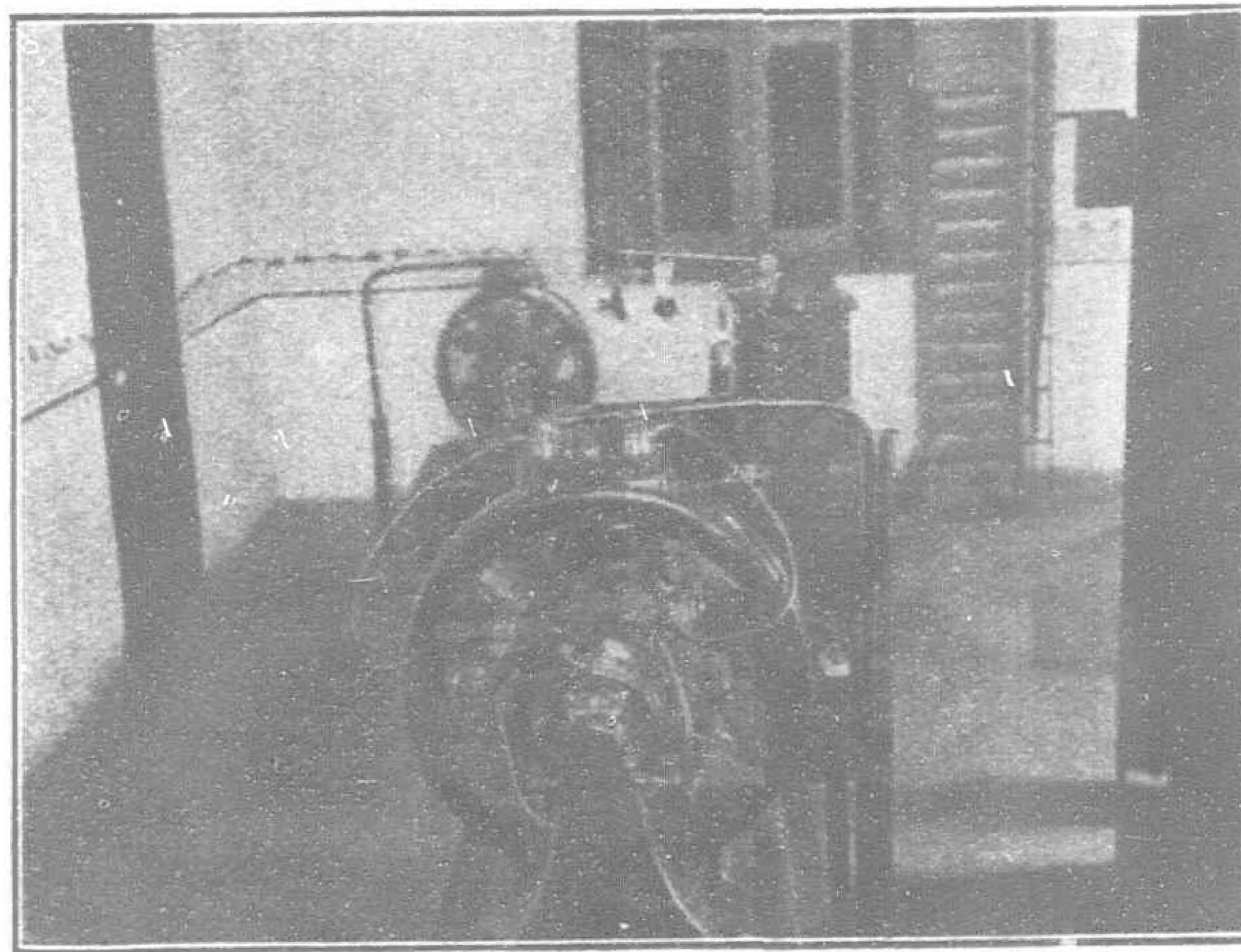
In addition to the main switchboard there is also a single position desk type toll switchboard with an equipment for 40 toll

order to permit the changing of telephones from one part of the city to another without making a change in the subscriber's telephone number.

On the relay rack are mounted the line and cut-off relays which control the lamp signals of the subscriber's lines in the switchboard. To the left of the relay rack is located the fuse board on which are mounted the fuses for protecting against heavy currents, the various circuits of the switchboard. The fuse board, relay rack and distributing frame are arranged for future growth in accordance with additions to the switchboard.



Power Board.



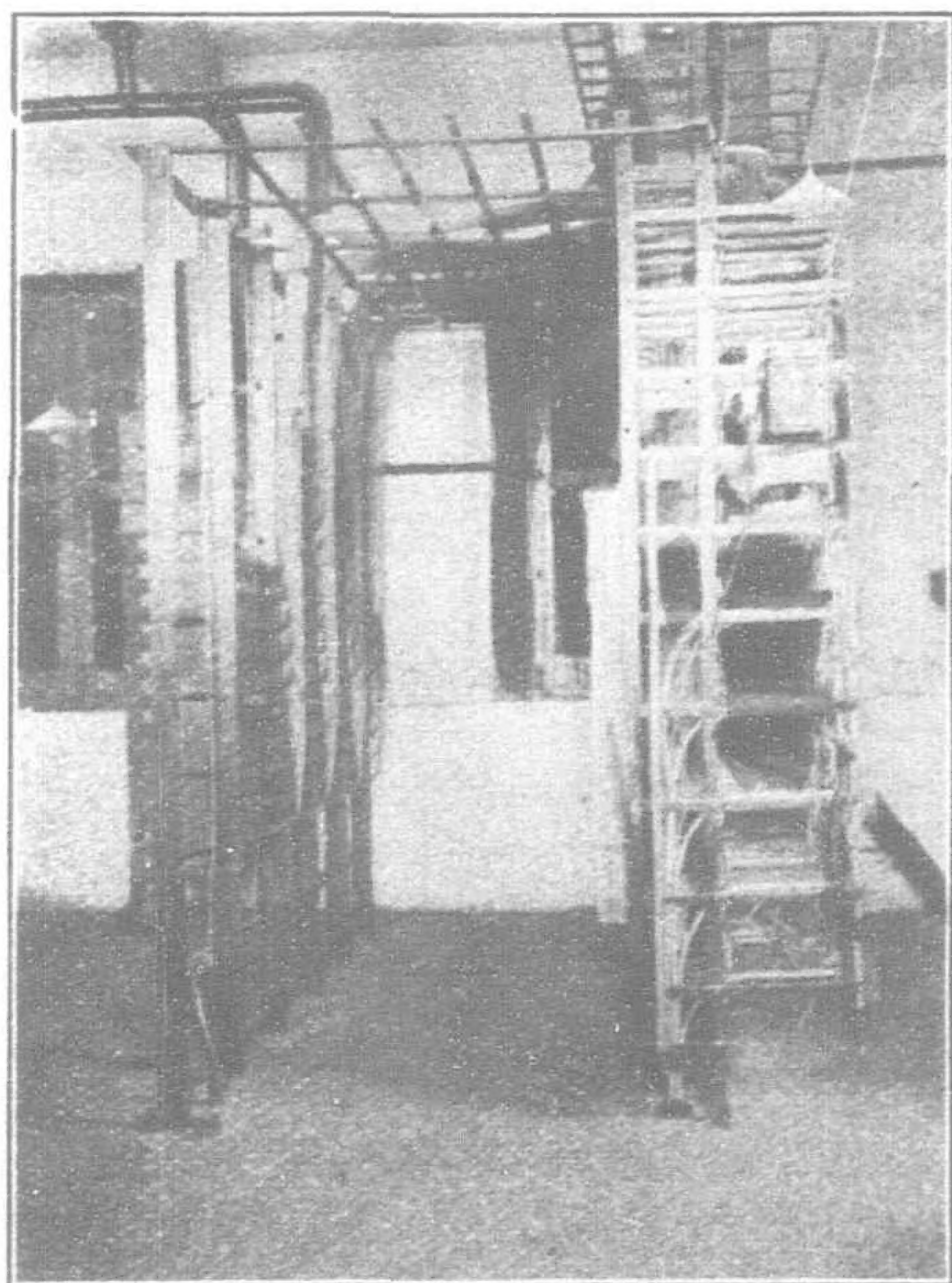
Charging Machines—another view.

lines. It is the intention of the telephone company to install toll or long-distance lines extending from Changsha into the surrounding country and one such line has already been erected, viz., from Changsha to Siangtan, a distance of about thirty miles.

The power apparatus and terminal racks and frames are located in a room directly beneath the switchboard so as to provide an economical and efficient arrangement of connections between the switchboard and various parts of the equipment. All wiring between the switchboard and the frames is contained in cable

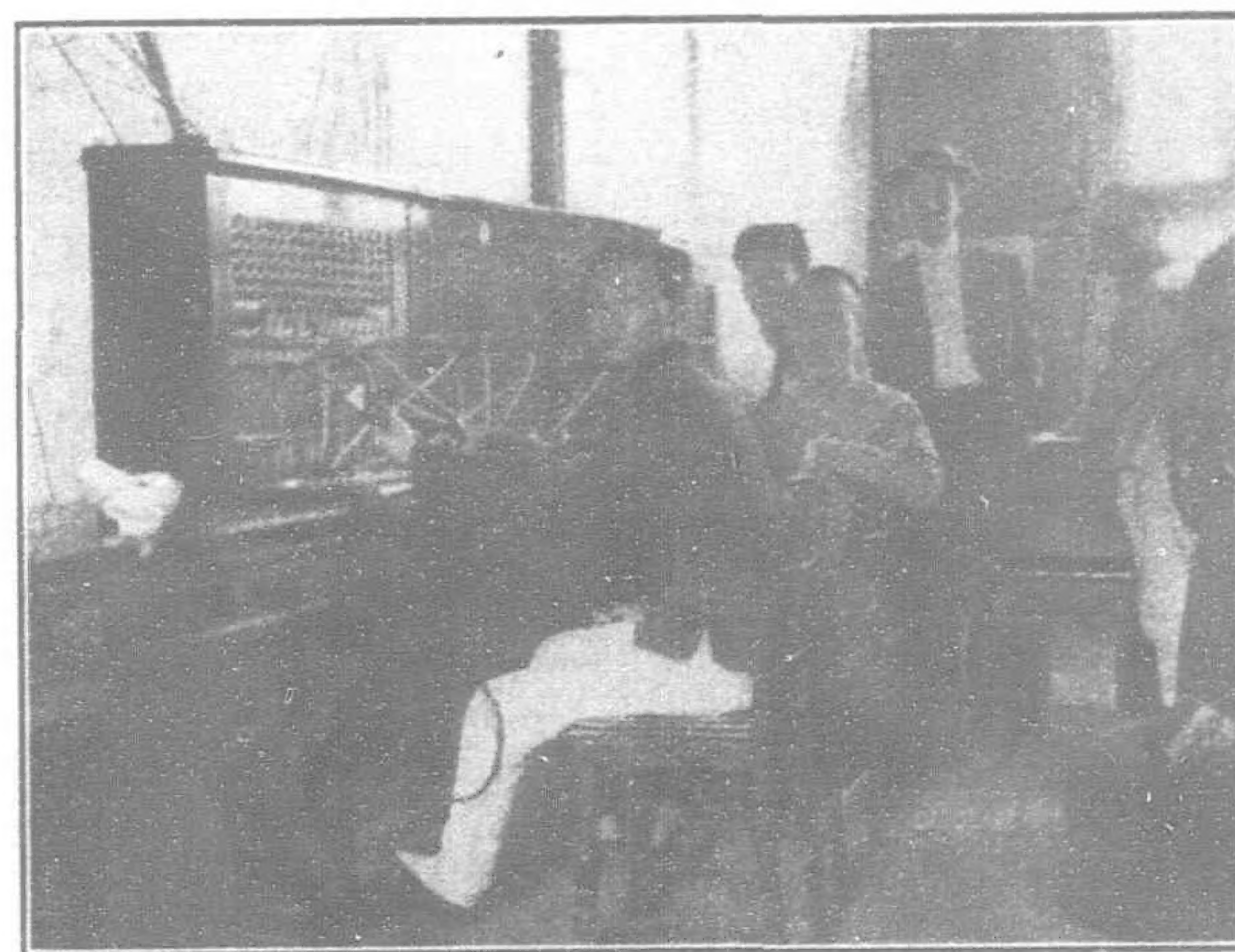
Electric current for operating the switchboard and subscriber's telephones is obtained from one central source, viz., a battery of storage cells located in a small room adjacent to the terminal room. This battery consists of eleven Chloride type cells and has a capacity at present of fifty amperes and may be increased to one hundred amperes in the future by the addition of battery plates. In addition to this main battery there is a smaller battery of eleven cells for increasing the voltage of the talking current on subscriber's lines when connected to long-distance lines, thus providing increased transmission efficiency.

Current for charging the storage batteries is obtained from either one of two charging outfits, this avoids the possibility of



Relay Rack and Distributing Frame.

which is placed on steel racks, these racks are designed to accommodate the ultimate capacity of cabling which may be required for the 3,000 lines. The accompanying photograph shows the relay rack and distributing frame. On the latter are mounted the terminals for connecting the outside lines, and also on the opposite side of this frame are mounted the protectors which prevent damage to the switchboard and apparatus from lightning or abnormal electric currents. The upper portion of the distributing frame is used for cross-connecting purposes in



Old Magneto Telephone Switchboard at Changsha.

interruption of service due to a temporary breakdown in the charging outfits. The principal charging outfit consists of a motor-generator set direct connected on one base, the motor to operate from the city lighting and power electric current supply. The other charging outfit consists of a generator belted to a gasoline engine, and is intended mainly for use only in case there is an interruption in the supply of current from the city mains.

Current for ringing the subscriber's telephone bells is obtained from either one of two sources, one a ringing dynamotor operated from the storage battery and the other a ringing generator operated by a motor connected to the city electric light mains.

The various switches, instruments, etc., for controlling the battery, charging and ringing currents are mounted on slate panel power board, supported on a steel angle work frame. The storage battery fuses are mounted on a slate panel located above the ringing machines just outside the battery room. The accompanying illustrations show the charging machines, ringing machines, power board, etc.

A Chief Operator's desk is provided in the switchboard room for the proper supervision of the work of the operators.

In the frame and terminal room is located the Wire Chief's desk, which is equipped with the usual circuits for testing the switchboard and outside lines for faults that may occur.

The lines from the central office to the subscribers' telephones are carried in cable to various distribution points at which are located cable terminals. The cable for this purpose is steel armored, lead covered, paper insulated telephone cable and is installed in sizes of 300-pair, 200-pair, 100-pair, 50-pair and 25-pair,

and is laid directly in the ground. At the cable terminals are located protectors to prevent damage to the cable. From the cable terminals wires are run on poles to the subscribers' telephones.

The subscribers' telephones are furnished in wall and desk types, and are of the metal case type with black enameled finish which is very durable and also ornamental. Following the usual design for China these telephones are equipped with a microtelephone which combines both the receiver and transmitter in a hand set. These telephones are equally suitable for local and long-distance service.

The new system is under the control and operation of the Hunan Provincial Government and was supplied by the Western Electric Company through their agents Arnhold, Karberg & Co.

The Western Electric Company sent out from their home offices two engineers to install the system and it was put into service during July.

THE RAILWAYS OF MALAYA

PROGRESS DURING LAST YEAR.

Reference is made in the Press from time to time to the spread of civilisation in the Malay Peninsula, and to the remarkable growth of material prosperity in that country since the British authorities extend their influence over its destinies. But to realise how much of this development is due primarily to the policy of road and railroad making one has to visit the country and compare it with other Eastern or Far Eastern lands where progressive works, from one cause or another, have been less marked, says the "Financier." As is the case with most great railway systems, the Malayan railways had a very modest beginning. The initial venture was a short line, eight miles in length, from Taiping to Port Weld, in Perak. Designed with the object of providing communication between the coast and the interior of the State, mainly in the interests of the tin industry, the line was opened for traffic on June 1, 1885. The mileage has been gradually extended, until to-day there are nearly 900 miles of railway in the peninsula, and work is now in progress which in a few years will link up the Malayan lines with the Siamese and Burmese systems, and bring about a transformation in the methods of travel and transport which cannot be without beneficial results to the whole of Southern and Eastern Asia. One other noteworthy fact that should be borne in mind is this: So far as the Federated Malay States system is concerned, the construction of the railway has been effected out of revenue, while financial help was given to the State of Johore and to the Siamese Government to enable them to build railways to join up with the F. M. S. system. This policy was dictated, doubtless, by a desire to render more effective the development of the British portion of the peninsula that is likely to accrue to a continuous line from north to south, with branches to all the principal metalliferous and agricultural districts, and carrying the produce of the interior to the various ports.

PURCHASE OF SINGAPORE RAILWAY.

In 1912 the whole of the railways in British Malaya, including the Singapore Government Railway and the Johore State Railway, were brought under the control and management of the Federated Malay States Railway Department, with its central offices in Kuala Lumpur. The general manager (Mr. P. A. Anthony, M.I.C.E.) reports that the outstanding feature of 1913 was the purchase of the Singapore Railway from the Colonial Government at a total cost of £482,533. This has enabled the Department to proceed with a scheme for doubling part of the line on the island, and to provide a station more in keeping with the importance of Singapore as the Southern terminus and sufficient siding and goods accommodation to enable the railway to keep pace with the rapidly-increasing traffic. Borings in the Straits of Johore on the site of the proposed bridge were taken during the year, and preliminary plans of the bridge are now being prepared by the consulting engineers. This bridge, connecting the island of Singapore with the mainland of the Malay Peninsula, will be one of the longest, if not actually the longest, in any of the Colonies. Mr. Anthony considers it important that this work should not be delayed, otherwise the railway traffic will overtake the limits of capacity of the wagon ferries, which, however, do their work admirably. During the year the purchase of the Prai dock and wharves (Province Wellesley) from the Colonial Government was also under consideration, and has since been completed. A comprehensive scheme for new wharves has been prepared. With the opening of the line to Bangkok by way of Alor Star, in Kedah, a large development of business between Penang and Siam must result, and large expenditure will be necessary at Prai during the next three or four years to enable the railway staff to handle this traffic.

INCREASED EARNINGS

In 1913 the gross earnings from all sources, including motor services, amounted to £1,113,976, as compared with £982,451 in 1912, an increase of £131,525, or 13 per cent. The dividend earned on a net profit of £317,677 works out at 3.93 per cent., as compared with a net profit of £355,854 and

4.35 per cent. in 1912, but it has to be explained that, in order to bring about an adjustment in accounts, due partially to changes of administration, the expenditure in the accounts under notice covers 12½ months, against revenue for 12 months only. It is interesting to note that the total net profit earned by the Federated Malay States Railways since the first section was opened in Perak in 1885 down to the end of 1913 amounts to £3,565,592.

The total mileage of lines open to traffic, including leased lines, on December 31 was 771 miles, an increase of 36 miles during the year, and, as there were over 102 miles of sidings, the total mileage of railroad in operation at the close of the year was 873 miles, against 826 in 1912. During the year the capital account of lines still under construction and surveys was increased by £527,745, while the total expenditure on account of special services on capital account amounted to £794,679. This latter amount, however, includes the cost of purchase of the Singapore Railway, referred to above. The total mileage of railway telegraph wires is 2,099 miles, an increase of 199 miles. Twenty-five new telegraph offices were opened, bringing the total number to 150 at the end of the year.

INTERESTING COMPARISONS.

For the year the train mileage totalled 3,351,405 miles, as compared with 3,194,200 in 1912; the total number of passengers carried was 13,143,659, against 11,589,273 in 1912; the goods carried amounted to 1,172,794 tons, against 988,416 tons, and 136,457 head of live stock, against 128,604. Appended is a table showing the distribution of passengers:—

	1912.	1913.
First class.....	243,055.....	286,555
Second class.....	1,091,346.....	1,607,207
Third class.....	10,254,872.....	11,249,897

These figures do not include season-ticket holders, passengers excessed on trains, workmen and scholars travelling on reduced-fare tickets or free-pass holders.

There was a decided increase of traffic handled at the ports of Telok Anson and Port Swettenham, and the general manager reports that during 1913, 140 ocean-going steamers called at Port Swettenham with import cargo, against 115 in 1912, and 53 called for export cargo, against 51 in 1912. These statistics do not include the British India steamers, which run regularly between Indian ports and Singapore, calling at Port Swettenham.

An interesting comparison is given in the following statistical table:—

	1912.	1913.
Miles open to traffic	734.. ..	771
Stations	161.. ..	174
Engines	128.. ..	153
Bogie passenger coaches	274.. ..	298
Four-wheeled coaches	66.. ..	65
Goods vehicles.. .. .	3,067.. ..	3,289
Train mileage.. .. .	3,194,200.. ..	3,351,405
Passengers	11,589,273.. ..	13,143,659
Merchandise (tons)	988,416.. ..	1,172,794
Live stock (head)	128,604.. ..	136,457

NEW WORK IN HAND.

For the current year the Federal estimates provide for an expenditure of £2,839,809 on railways, against £2,168,966 in 1913 the amount for special services on capital and revenue accounts and for construction being estimated at over £1,000,000 sterling. This latter amount is about half-a-million less than was projected last year, but includes the cost of a good deal of extension work on the East Coast Railway through Pahang and Kelantan and the construction of a new line from Bukit Mertajam, in Province Wellesley, to Alor Star, the capital of the State of Kedah, and lines opening up fresh territory in the Federated States. These facts have an interest to the manufacturers in Great Britain, for, although a certain amount of work on rolling-stock and other gear is carried out in the State workshops by native workmen under European supervision, orders have to be placed in England for much of the material used on these Malayan railways. The interest in the expansion of trade in British Malaya, therefore, is not merely local, and many will watch with personal interest the changes that are being effected by railway expansion in this remote portion of south-eastern Asia.

TRADE IN NANKING, CHINKIANG AND WUHU

The treaty ports of Nanking, Chinkiang and Wuhu were responsible for a combined trade of \$45,800,200* during 1913. The import of foreign goods accounts for \$17,374,147 of this total. Direct shipments from Hongkong consisted chiefly of British or Indian manufactured goods and those from the United States of kerosene and other oils. Imports of American manufactured goods were valued at about \$1,150,000 and consisted chiefly of shirtings, sheetings, drills, kerosene, sewing machines, household stores and timber (soft wood). An increasing demand among the native population for foreign-style clothing, hats, caps, shoes, etc., is everywhere felt, and although figures for the imports of this class of goods into this district are not available, a conservative estimate would place the amount at \$100,000. So far as is known the American manufacturer has no share in this trade. Foreign style hair-dressing shops are furnished chiefly with products of Japanese manufacture.

The commodities supplied by Japan are very numerous owing largely to their cheapness, and include cotton cloth, drills, handkerchiefs, towels, cotton yarn, clothing, coal, bed and table covers, glassware and glass, hosiery, lamps and lampware, looking glasses, paper perfumery, soap, sugar, toilet requisites, toys, umbrellas and matches. The aggressive commercial policy of the Japanese has given them a strong foothold, but if the American manufacturer wishes to compete, a careful study of conditions should enable him to meet success in many lines.

NANKING.

Favorable Trade Conditions—New Railroad.—The value of the net trade of Nanking in 1913 was \$10,451,666, an increase of \$1,247,573 over that of the preceding year, in spite of the fact that the rebellion kept business at a standstill for about 10 weeks. Foreign goods showed increased imports of \$896,355 and shipments of export cargo increased by \$917,737, while a decrease of \$568,520 was seen in imports of native goods. The total trade in 1913 was made up as follows: Foreign imports, \$4,828,165; native imports, \$1,265,840; exports, \$4,357,661.

The increase in the foreign import trade was no doubt due largely to the Tientsin-Pukow Railway, the opening of which has provided a new trade route of goods going to Anhui and Shantung Provinces, previously supplied by way of the Grand Canal and Chinkiang. Figures for the import and export shipments to and from this port over the Shanghai-Nanking Railway in 1913 are not available, but a conservative estimate values the trade at not less than \$1,125,000.

Average crops were realized during the year, and the new trade route opened by the Tientsin-Pukow Railway was responsible for the large increase in the export of native produce. Wheat cultivation has become prominent since 1912, and it is likely that the future shipments of this cereal will rapidly increase. The manufacture of the famous Nanking silk brocades and silk-gold tapestry has steadily declined since the fall of the Manchus, because much of the goods was used in the old-style official dress.

The rolling stock of the Tientsin-Pukow Railway at the end of 1913 consisted of 32 locomotives, 66 passenger and inspection cars, and 490 freight cars. The freight and passenger receipts amounted to \$900,600. Five large corrugated-iron godowns at Pukow have been completed, and the main station and the jetties are nearly finished. The pontoons for the use of passengers and cargo are moored and in working order.

Electric Light—Coinage at Nanking Mint.—The electric-light plant was constructed in 1909 for the local government at a cost of \$150,000. There are now installed about 7 miles of wire and 8,000 lights, including 200 street lights. The average monthly receipts are about \$3,300, and the plant so far has only paid expenses.

During the first nine months of the year coins to the value of \$3,991,000 were minted. From October 1 the mint coined daily 100,000 dragon dollars and 1,200,000 copper 10-cash pieces, making a monthly profit of about \$9,000 during that period. The mint purchased its silver from native sycee merchants at Shanghai, the metal being shipped in 50-tael shoes. The reason given for purchasing the silver in this expensive way is that the native workmen can not handle the ordinary heavy bricks of bullion when melted in the crucibles without breaking so many of the latter as to incur heavy loss. The copper is purchased from Japan at an average cost of \$13 per hundredweight. The zinc alloy comes from Yunnan Province.

Afforestation—Model Farm.—Through the efforts of Joseph Bailie, of the University of Nanking, considerable progress has been made in the planting of trees in the vicinity. Early in the year a wood lot was planted with bead tree (*Melia azedarach*), Chinese maple (*Acer polymorphum*),

and walnut. The estate now has 200,000 trees. The walnuts, both in the field and in the nursery, proved successful and several thousand young trees are now growing. During March over 100,000 trees obtained from Japan were planted, and a like quantity were distributed to outside applicants. Owing to delay in shipping the *Cryptomeria japonica* many were lost, but over 80 per cent. of the 50,000 Japanese red pine (*Pinus densiflora*) are still thriving. The seeds of the yellow pine that the United States Department of Agriculture shipped to the estate produced about 1,000,000 seedlings, but three-fourths were lost during the rebellion.

A model farm of 280 acres, 10 miles up the river from Nanking, is run by a stock company formed by well-to-do Chinese merchants in the United States. The company is capitalized at \$400,000 of which \$50,000 is paid up. One hundred and fifty acres are under wheat cultivation. In addition 800 fruit trees obtained from California nurseries have been planted, and it is hoped that oranges, lemons, apples, peaches and grapes will be successfully grown. The farm has in use 12 American plows, 20 native plows and one corn planter.

Direct Imports by Countries of Origin.—The value of the direct import trade with foreign countries was \$1,983,802 in 1913, distributed as follows:—Japan, \$1,412,717; United Kingdom, \$256,505; Hongkong \$220,313; United States, \$59,924; Germany, \$11,858; Singapore, \$11,665; British India, \$3,911; Dutch East Indies, \$3,474; Belgium, \$1,435. More than half the total consisted of copper purchased from Japan for minting purposes. The trade in cotton goods, although showing a decline in some lines, was on the whole satisfactory, and a good demand in the more important grades is looked for in 1914. Imports of woollen goods showed a large falling off, only 728 yards of cloth, 40 pieces of long ells, and 250 yards of Spanish stripes being imported. Imports of railway plant and materials for the southern section of the Tientsin-Pukow Railway have so far amounted to \$3,146,543, the greater part of the material coming from the United Kingdom.

Principal Import Fluctuations—Decrease in Oil Shipments.—In comparison with the figures of the preceding year, imports of American gray shirtings showed an advance and British goods a decline. The latter, however, continue to be in greater demand than the former, chiefly in the 7-9 and 9-11 pound grades. There was a large increase in imports of English sheetings of the 11-pound and over quality, but a falling off in imports from the United States. In plain white shirtings, three-fourths of the trade was in the English article, the remainder of the imports consisting of 48,699 pieces from the Netherlands. Imports of American drills decreased, but there is still a strong demand for the 12 $\frac{3}{4}$ -pound and over article. English jeans also showed a decrease; all this cloth imported was in 40-yard lengths. Imports of turkey-red cottons and plain italians were steady, but there was a decrease in colored italians. The demand for cotton yarn was brisk throughout the year; imports from Japan have now secured a good share of the trade.

Imports of Chinese cotton goods were fairly satisfactory.

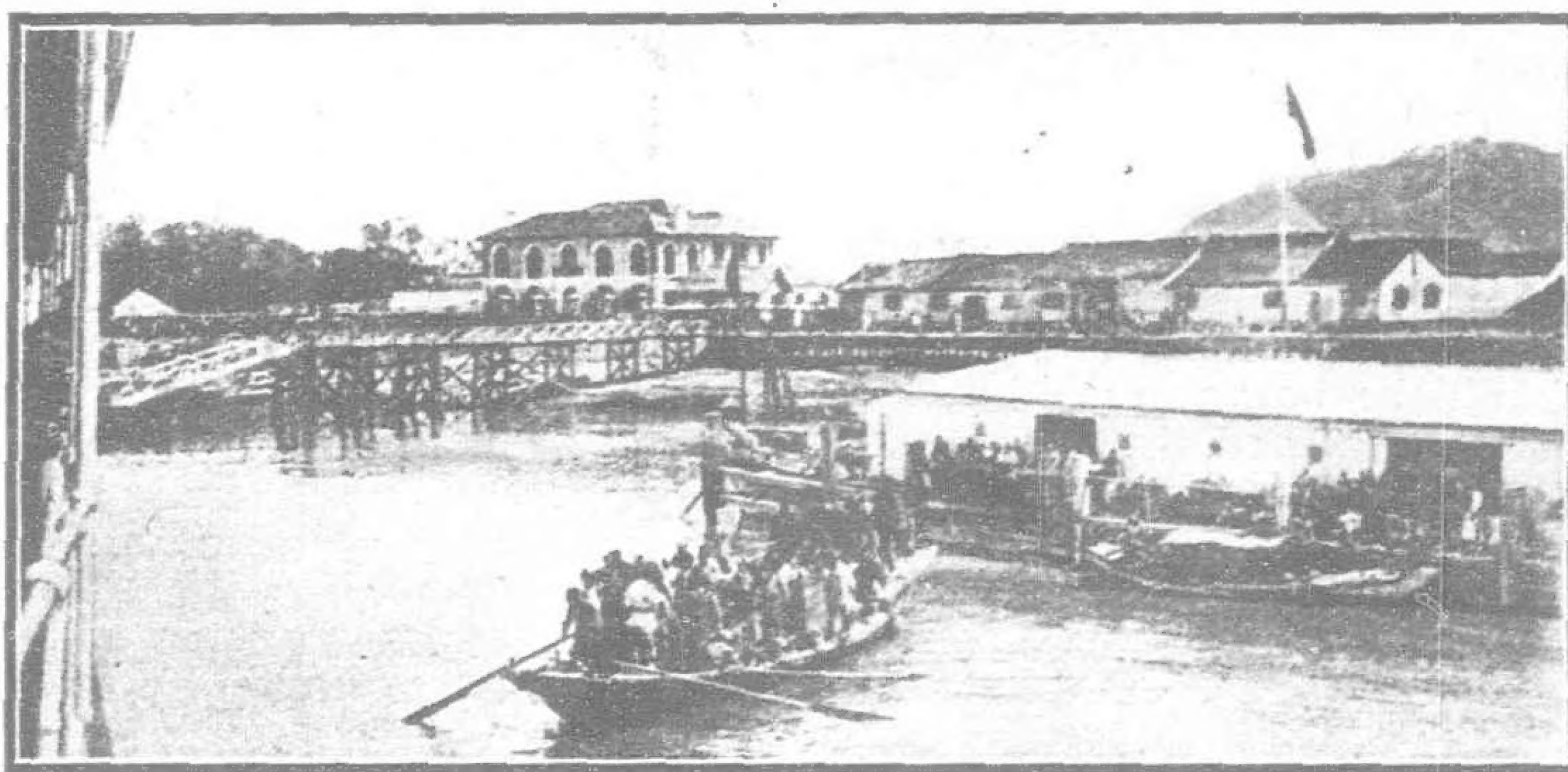
The unusual amount of copper imported was used almost entirely for minting purposes. Shipments of iron and lead arrived also in increased quantities. The cigarette trade has shown great progress recently, and 1913 was a record year. Shipments of coal showed a decline, as did imports of machinery and matches. There was a fair trade in aniline dyes, but imports of needles decreased. The kerosene trade and the trade in foreign soaps were satisfactory and a fair business was done in household stores. Purchases of brown and refined sugar were very large, and imports of timber doubled during the year.

The large stocks of American oil imported in 1912 caused a decline in imports of both tinned and bulk varieties during 1913.

Variations in Exports—American Trade Shipping and Revenue.—Exports of beans in 1913 were double those of 1912 and wheat shipments showed a remarkable rise. Exports of brassware and paper fans were satisfactory, feather shipments increased, as did those of hemp fiber and silk refuse. Melon seeds showed a large gain and sesamum seed shipments nearly doubled. Decreases were noted in exports of hides, raw silk, cocoons, and silk piece goods. The trade in untanned goatskins continued to dwindle, the export during the year being scarcely 5 per cent. of the 1904-5 figures for this article.

Exports to the United States invoiced at the American consulate at Nanking amounted to \$520 (of which \$500 was the value of a private library) in 1913, as compared with \$341 (curios) in 1912. No shipments were made to Hawaii, the Philippine Islands, or Porto Rico.

The number of foreign vessels entered and cleared at Nanking during 1913 was: 2,884, with an aggregate tonnage of 5,064,916, as compared with 2,773 vessels of 4,845,287 tons in 1912. Of the 1913 shipping 1,696 vessels of 3,146,966 tons were British; 904 vessels of 1,648,018 tons were Japanese; 218 vessels of 245,336 tons were German; and 44 vessels of 6,686 tons were



The Station at Nanking.

* Values wherever mentioned are in U. S. currency.

American. The American vessels that entered the three ports of the district were nearly all oil steamers or oil barges under tow.

The customs collection at Nanking during the year was as follows: Import duties, \$58,835; export duties, \$86,962; coast trade duties, \$15,884; transit dues, \$4,008; and tonnage dues, \$4,840. The total collection (\$170,529) showed an increase of \$42,746 over the figures of the preceding year.

CHINKIANG.

The value of the net trade of Chinkiang was \$18,410,960, an increase of \$2,243,582 over that of the preceding year. Foreign imports amounted to \$6,967,760, native imports to \$4,662,878, and exports to \$6,780,322. The increase was chiefly in exports, where it amounted to \$2,629,908. Imports of native produce showed a gain of \$751,813, while those of foreign goods showed a falling off of \$1,138,139. The outbreak of the rebellion in July seriously restricted the trade of the port during 8 or 10 weeks. The decline in the import trade is to a large extent due to the condition of the Grand Canal. The large region north of Chinkiang is almost entirely dependent upon the Grand Canal as a trade feeder, but this once important waterway has been so neglected in recent years that navigation is difficult if not impossible during the dry season. The excellent railway facilities at Pukow and Kiaochow have also assisted in diverting trade that formerly came down the canal.

Export shipments of bean cake, wheat flour, and sesamum seed showed very large gains, the trade in the latter having more than trebled. Out of a total value of native produce of \$1,590,727 exported by railway to Shanghai, more than \$1,500,000 worth consisted of sesamum seed. The imports by railway during the year totaled \$507,161. The import trade of the port during the year must be considered satisfactory and, in spite of the condition of the Grand Canal, the volume of import business should experience no further decline within the next few years.

Direct Imports, by Countries—Principal Imports and Exports.—The value of the articles imported direct from foreign countries totaled \$2,864,574 during 1913, distributed as follows: Hongkong, \$948,940; Japan, \$837,511; United States, \$569,678; Indo-China, \$174,572; United Kingdom, \$156,173; Dutch East Indies, \$144,519; Singapore, \$18,071; British India, \$9,365; Germany, \$5,249 and Netherlands, \$496.

Increases in Imports of Cotton Goods.—In comparison with the figures of the preceding year imports of shirtings, gray and plain, showed a good increase, the English manufacturer having now a monopoly of the trade; imports of American, Dutch and Japanese shirtings were very small during the year. The local demand for this article is in the 7-9, 9-11, and more than 11 pound weights. American sheetings experienced a slight advance, the trade being chiefly in the 9-11 pound grade. Imports of English sheetings indicated a steady trade, shipments of this cloth being confined almost entirely to the 11-pound and over article. Three-fourths of the plain white shirtings, sales of which increased 20 per cent. in 1913, are furnished by English manufacturers. The remainder of the trade is shared about equally by American and Dutch makes. There were decreases in imports of American and English drills, the former controlling the trade. The sale of Japanese drills has considerably increased and competition with this brand may prove keen in the near future; the demand is almost entirely in the 12 $\frac{3}{4}$ -pound grade. English jeans predominated in imports of that cloth, which were confined to the 40-yard lengths. Shipments of T-cloths showed a slight advance, the demand being entirely for the English and Indian varieties, and imports being in the 32-inch by 24-yard size. There were good increases in chintzes and furniture coverings, printed crapes, and plain cotton prints. There was an advance of nearly 20 per cent. in purchases of plain cotton italians, and increases were noted in imports of plain and figured cotton lastings, figured cotton italians, dyed cambrics, turkey red cambrics, and shirtings, and cotton flannel. The demand for velveteens was steady, the imports being of the 22-inch size. Towels and handkerchiefs came from England and Japan, the trade in both being of small value. A slight increase was noted in imports of Japanese and Indian cotton yarn, but the English variety is slowly disappearing from the market.

Chinese cotton goods continued to show gains, especially Shanghai manufactured sheetings and nankeens. Native cotton yarn imports appeared to show a revival during the year, and with the exercise of greater care in production should be in active demand.

Other Imports—Increases and Declines in Exports.—Imports of foreign metals, sapanwood, bags, and coal showed increases, but purchases of Japanese matches continued to decline. Shipments of kerosene from the United States fell off considerably, but those from Borneo and Sumatra increased. Imports of black pepper, sandalwood, and soda showed gains, and a large trade was carried on in sugar, especially in brown and refined grades. The aggressive and practical methods of the foreign sugar manufacturers in Hongkong have given them a monopoly of the sugar

trade in China, with little fear of competition. The activities of the Hongkong refiners are concentrated on the effort to supplant the native brown and white sugars with the brown and refined products of their manufacture.

A large increase over 1912 was seen in exports of bean cake, a slight advance in wheat exports, and a decline in exports of beans and peas, and egg albumen and yolk. Shipments of wheat flour, the product of local mills, almost doubled, and the export trade in groundnuts was good. Exports of medicines increased, but decreases were felt in dried lily flowers, hams, cow and buffalo hides, groundnut and sesamum seed oils, and melon seeds. Shipments of sesamum seed reached a record figure, having more than trebled during the year. The export trade in raw silk was steady, but there was a considerable falling off in shipments of silk piece goods.

Shipping and Revenue.—The number of foreign vessels that entered and cleared at the port of Chinkiang in 1913 was 3,082, with a total tonnage of 5,406,884, as compared with 2,972 vessels of 5,170,238 tons in 1912. Of the 1913 shipping, 1,804 vessels of 3,281,392 tons were British, 954 vessels of 1,801,716 tons were Japanese, 208 vessels of 261,150 tons were French and 86 vessels of 16,912 tons were American.

The customs collection during the year was as follows:—Import duties \$143,270; export duties \$137,183; coast-trade duties \$54,851; opium duties \$275; tonnage dues \$8,961 and transit dues \$111,859. The total collection showed a decrease of \$254,729 over that of the preceding year, due almost entirely to the falling off in the imports of opium, on which the duty collected in 1912 amounted to more than \$262,500.

Local Industries.—Two oil companies, one of which is American, maintain large installations on the water front. The American company uses oil barges towed by launches and small tank junks to distribute oil to many points reached by river or canal. There are two silk filatures in Chinkiang which have in operation 200 and 248 reeling wheels, respectively. Each filature has installed two boilers of British manufacture which consume each five tons of coal per day. In each filature the output is one picul (133 $\frac{1}{3}$ pounds) per day, or where new cocoons are reeled 190 pounds. The amount of cocoons required to produce 133 $\frac{1}{3}$ pounds of silk is as follows:—first quality spring cocoons 600 to 613 pounds; summer cocoons 800 pounds, autumn cocoons 933 pounds. There are 940 employees in the two filatures, most of whom are women.

There are five flour mills in this district, with a total output in 1913 of about 500,000 sacks of 50 pounds each. The four larger mills have a daily production of about 1,200 sacks. In the mills at Wusih and Taichow only American machinery is used; at Tungchow the mill is fitted throughout with British machinery, while at Kaoyu both American and British machinery is installed.

The one bean mill in Chinkiang operates 100 native oil presses and four native crushers. It uses daily about 40 tons of beans and has a daily output of 2,000 pieces of bean cake, each weighing about 63 pounds. The quantity of oil produced depends upon the quality of the beans; but generally speaking 133 $\frac{1}{3}$ pounds of beans will yield 16 to 19 pounds of oil, while the inferior grades yield 14 to 16 pounds. The mill employs about 100 workmen.

WUHU.

The value of the net trade of Wuhu in 1913 was \$16,937,574, a decrease of \$5,192,141 over that of the preceding year. Foreign imports amounted to \$5,578,222, a decline of \$1,545,979; native imports to \$3,965,102 an increase of \$1,690,019, and exports to \$7,394,250, a decrease of \$5,336,182. Although the commencement of the year showed a brisk trade, a reaction soon set in, owing to unsettled financial conditions in Shanghai, and local trade was at a standstill for nearly two months during the rebellion. The financial situation was unfavorable throughout the year and there were several bank failures.

The decrease in trade may be attributed to the general decline caused by the rebellion in July and to the prevailing low price of rice, the provincial trade staple. The estimated annual production of rice in the Province in a good year amounts to about 600,000 tons, 60 per cent. of which is usually available for export; and it is upon this commodity that the trade of the port largely depends. The low price of rice caused the accumulation of large stocks, a general slackness in trade and money stringency. In 1912 eighty steamers were engaged in the carrying trade in rice, but only thirty vessels left with full cargoes in 1913. In spite of the drought during the summer an eighty per cent. rice crop was realized, the yield proving an average one.

The value of foreign goods shipped to the interior under transit pass was \$2,418,218. The trade in cotton goods in most cases showed an advance, the greatest increases being in white shirtings and English jeans. Only 778 pieces of woollen cloth were imported, consisting of English camlets, lastings and long ells, and 4,838 yards of broad, medium habit, and



View of Chinkiang.

Russian-cloth and Spanish stripes. Imports of camlets trebled, but there were decreases in most other lines. Trade in sugar was excellent.

Direct Imports from Foreign Countries—Trade by Articles.—The value of imports of foreign goods from foreign countries amounted to \$678,772 during 1913, of which \$318,894 came from Hongkong; \$270,784 from Japan; \$59,671 from the United States and \$18,831 from the United Kingdom. The principal articles entering into this trade were sugar, copper and kerosene.

Principal Increases and Declines.—In cotton goods there were increases over 1912 in white shirtings, English jeans, printed chintzes and cotton prints, italians, venetians, crêpes, turkey-red cottons, velvets and velveteens, and India yarn; and decreases in gray sheetings, American and English drills, and Dutch jeans, which have been replaced to some extent by italians and venetians and by native cotton cloths from Shanghai and Tientsin. The demand for plain gray American shirtings continued to decline, and only 140 pieces were imported. In American drills the chief demand was for the grade of 12 $\frac{1}{4}$ pounds and over. American jeans have almost disappeared from the market, only 40 pieces having been imported during the year. Attention must be drawn to the cotton yarn manufactured in Shanghai, imports of which have more than doubled during the last two years, and which seems likely to supplant the Indian and Japanese varieties.

In foreign metals there was a good trade, imports of iron cobbles, plate cuttings, and tin slabs showing large increases. Imports of cigarettes have more than trebled since 1910. The Japanese match trade declined more than 20 per cent. Imports of soap and umbrellas showed substantial increases, the largest share of the trade in these two articles going to Japanese manufacturers. Imports of brown and white sugar in 1913 were the largest on record, the Hongkong product, as usual, having the largest share in the trade.

In comparison with the figures of the preceding year a slight increase in bean exports was noted, but shipments of rice, the staple product of the province, declined nearly 50 per cent. Shipments of wheat showed a remarkable rise, and it is hoped that the figures of 1909-10 will again be reached, if not surpassed. The European demand for egg albumen and yolk continued brisk, and the trade in feathers was steady. Shipments of hemp fiber and leaf tobacco doubled during the year, and exports of flour were satisfactory. The trade in groundnuts, medicines, paper, and sesamum seed was also steady, while shipments of rapeseed doubled. Exports of seed-cake nearly doubled, and silk shipments were fairly satisfactory. The trade in cow and buffalo hides and in tea showed a falling off.

Shipping and Revenue.—The number of foreign vessels that entered and cleared at Wuhu during 1913 was 3,105, with a tonnage of 5,140,411, as compared with 3,137 vessels of 6,166,030 tons in 1912. Of the shipping in 1913, 1,937 vessels of 3,234,609 tons were British, 886 vessels of 1,632,422 tons were Japanese, 214 vessels of 246,924 tons were German, and 60 vessels of 15,932 tons were American.

The customs collection during the year was as follows: Import duties, \$29,660; export duties, \$235,921; coast trade duties, \$18,128; transit dues, \$51,423; tonnage dues, \$3,846. The total collection (\$338,978) showed a decrease of \$295,348 as compared with the preceding year. During 1912 there was a collection of \$186,113 on opium; but no revenue was derived from this source in 1913 because imports of the drug were prohibited.

The collection of transit dues in 1913 proved the highest on record and import collections showed a slight gain.

Oil and Electric-Light Companies.—The two oil companies that have installations at Chinkiang maintain branches at Wuhu for the storing and distribution of oil. During the year the American company constructed a tank of 1,780,000 gallons, and the other company two tanks, with a capacity of 200,000 gallons each. The American company operates six tank junks of 3,000 to 6,000 gallons capacity. The bulk oil under the new arrangement can be stored at 20 stations where small tanks are kept for the purpose. The junks in use are of the ordinary native type fitted with steel tanks.

The electric-light company, which has a capital of \$125,000, has in operation two dynamos of 600 horsepower, one condenser, and two large pumps. The two dynamos are of German production and the boiler of British make. The foreign machinery now installed represents an outlay of about \$45,000. The plant during its first six years of operation failed to show profits, but during the past year the company has met with success. There are 4,200 lights in public buildings and dwellings and 180 street lights. The light bulbs range in candlepower from 16 to 100 and are of the "Osram" style.

Rice Mills.—There are four rice mills in operation at this port, one of which, established in 1912, is driven by electricity. The engine is of 75 horsepower with current supplied by the local electric-light company. There are nine sets of hulling machines driven by electric motors, and these machines mill 59 $\frac{1}{2}$ tons per day of 14 working hours. In addition there is one husk mill of American design that can clean daily 29 $\frac{1}{4}$ tons of grain. In the engine room are installed two three-phase motors of German make. The best season is during the autumn months when day and night shifts are in operation. A gross profit of 7 $\frac{1}{2}$ cents per 100 pounds is made by the mill, and after deducting working expenses and interest a net profit of 1 $\frac{1}{2}$ cents odd per 100 pounds is realized.

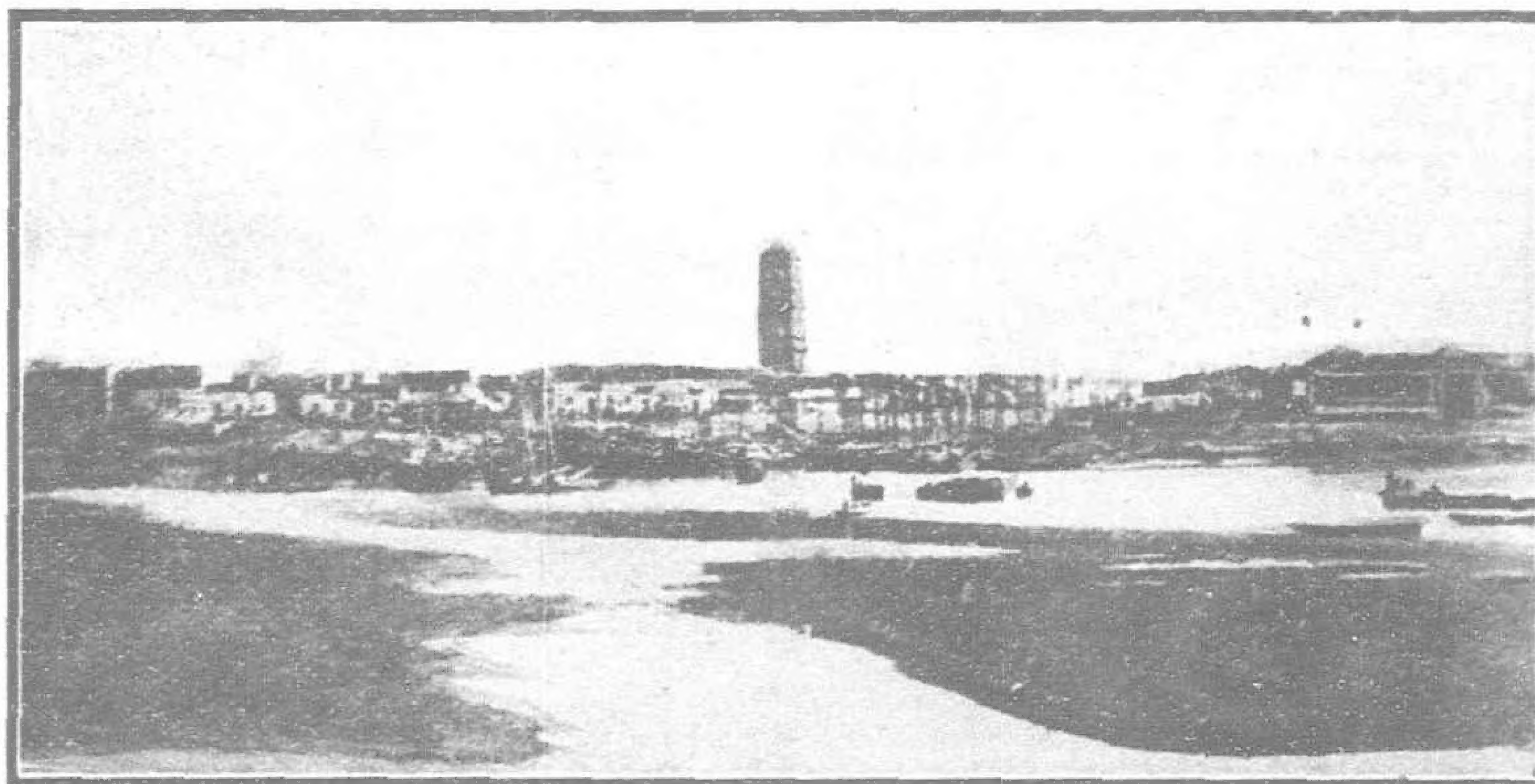
At one of the other mills the hulling machines are from Shanghai and the engine and boiler from the United States. The mill has been in operation a little over one year and has now installed 24 hulling machines with a capacity of 119 tons per day. The engine is of 160 horsepower. During the past year this mill was operated at a loss, but a good profit is looked for in 1914.

A third rice mill was installed seven years ago and has been successful in reaping a good annual profit. The mill has in operation two motor engines of 50 and 24 horsepower capacity, respectively, both of British manufacture, which consume 15 gallons of kerosene per hour. In addition there is installed a boiler operating a 24-horsepower

engine, also of British make. The mill has in operation 15 hulling machines with a daily capacity of 89 $\frac{1}{4}$ tons. The total amount of rice milled during the past year reached 8,925 tons, and the net profit was \$2,800.

Flour Mill and Knitting Factory.—There is one flour mill in operation at this port, with a boiler of American and other machinery of British manufacture. This mill is capable of grinding daily 21 tons of wheat.

During 1912 a factory was established for the manufacture of cheap cotton singlets, underwear, etc., but little or no business was done during the past year. German and Japanese machines for knitting stockings are now being imported; the German machine selling for \$38 and the Japanese product for \$17. The sellers of both machines offer bonuses to the factory owners on the number of stockings made by their respective machines, the Japanese firm paying 17 and the German firm 19 cents per dozen pairs. This work is done chiefly by women.



View of Wuhu.

THE CHINESE DOMESTIC LOAN

Considerable interest is being taken in the flotation in China of a Domestic Loan of Mex. \$16,000,000. Special inducements were offered to those who might be instrumental in obtaining subscribers to the Loan. A commission ranging from 4 per cent. for the underwriting of \$100,000 to 6 per cent. for \$1,000,000 and upwards was promised. The Loan is issued under the auspices of the Loan Committee of the Domestic Loans Bureau. This Committee is of a representative character comprising Officials of various Ministries, the heads of the principal Chinese banks and six of the largest bondholders. Provision was made for foreign representatives on the Committee.

If conditions were normal, and it were not necessary to take into consideration the general financial position of the world the Loan would appear an attractive investment. The interest is six per cent. and the issue rate is 88. The currency of the Loan is twelve years, redemption beginning the fourth year. A fund of \$2,800,000, part of the annual surplus income of the Peking-Hankow Railway, is to be created as principal for the redemption of the Loan every year, and the interest will be met by a

joint appropriation of \$30,000 every month by the Ministry of Finance and the Ministry of Communications. It is interesting to compare this Domestic Loan with the Reorganisation Loan of 1913. The interest in that case was five per cent. and the actual amount received by the Chinese Government was 84. The security for the Reorganisation Loan was more tangible and, although the international political situation was not so good as it might have been, conditions were much better then than they are to-day. It would be difficult to say at what rate, if at any, a Chinese loan could be floated on the international market within the next few years. That interest will rise as a result of the war is certain. Debtor nations will have to make extremely attractive offers when they wish to obtain accommodation. Existing loans as they fall in will only be renewed at greatly increased rates. Bearing these facts in mind the terms upon which the Domestic Loan has been offered are understandable. It has, however, to be borne in mind that the creation of a precedent of terms such as these may be found awkward later on, and it would be well for China to reconcile herself to the fact that she is likely to have to pay heavily for financial accommodation in the future.

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DR. ADAMS AND RAILWAY ACCOUNTS

The departure of Dr. Henry C. Adams from Peking for America on September 12 brought to a close the first stage of one of the most important essays at reform in China's railway management that has so far been made. Dr. Adams came to China about a year ago at the special instance of the Ministry of Communications to assist a Commission in the unification of China's railway accounts and statistics; and for this work Dr. Adams was granted a year's leave by the Interstate Commerce Commission, of which he is a distinguished member. We have made frequent reference to the progress of the Commission's work, but so far have published no comments by Dr. Adams, an omission which we are now able to repair by recording the gist of a conversation held with him prior to his departure.

Dr. Adams came to China apprehensive of the growth of considerable difficulties as his work proceeded. The conditions surrounding the creation of what railway system existed in China were, on the surface, extraordinarily complicated by international rivalry and jealousy; and the cosmopolitan nature of the financing and the accounting postulated obstruction from the outset. But to Dr. Adams' great surprise these difficulties quickly proved themselves to be more imaginative than real. A conference between the accountants of the various railways and the Chinese constituting the specially created Unification of Accounts Commission established a harmony that developed as time went on, and proved the existence on the part of the foreign accountants of a genuine desire to have a set of accounting forms created whereby there could be general uniformity in the railway accounting and statistic service of the country. Of this Dr. Adams spoke with considerable pleasure, attributing whatever success had been obtained to the co-operation of the various foreign accountants.

"The first work undertaken by the Commission, was," said Dr. Adams, "the arrangement of rules and regulations for the control of construction accounting. That is, the engineer's classification of capital expenditures. Those rules have been promulgated and are now in force; and so far as formulated accounting is concerned the Chinese accounts are in better shape in this direction than in any other part of the world.

"The operating accounts were next considered, and just as explicit and detailed rules were devised for auditing the operating revenues as for the construction accounts. All expenses are properly classified, and on every road in the Government's control items of expense will be recorded under the same heads. In fact the headings of the construction and operating accounts are the same—a feature not in existence in any other country. It will give a test which no other country is getting—a test of operation easily applied. These accounts will show the percentage of maintenance cost on capital cost; each year can be found out the percentage of maintenance charges to the original cost, and that analysed by eighteen or twenty sub-heads. These figures cannot be got right off the accounts in use in any other country.

"A third set of accounts will show the true surplus for the year and for each individual road since its beginning. It will supply the figures used in budgets, and thus give what has not been obtainable before—the actual profit, if any. Each year will stand by itself. The income account is, for China, a most important thing; it gives the operation expenses and the amounts due, for instance, with regard to bonds for each year; and a special account is provided to pay off old debts. These accounts provide the control, and with their aid auditors can go to any road and find out what is being done, and what is being made, for the foreign bond-holder as well as for the Chinese. My hope is that this will not create a controversy; the foreign bondholder should regard it as being as important to him as to the Government."

Dr. Adams leaves the country hoping that the result of the labors of the Commission with which he was so happily connected will be thoroughly enforced. He points out that China occupies a unique position. As she is, at the beginning of her railroad activity she has secured in one year what it took twenty years in

other countries to work out. She has, further, had the advantage of their experience and now possesses more advanced accounting forms than they possess. This in itself should be an incentive to the Government to introduce and enforce the use of all the forms framed by the Commission. China has, in the past, employed a multitude of Commissions and has pigeon holed their reports. This Commission has done something tangible and practicable, and it will be extremely regrettable, and criminal shortsightedness, if the Government fails to utilise what it has now secured.

RIVER CONSERVATION

The departure of the engineering party headed by Colonel Sibert for America signalises progress in the work which the Red Cross Society of America is endeavoring to do for China. The party was despatched by the Society to make a report upon the feasibility of flood prevention in the Hwai River region, and after careful examination Colonel Sibert will be able to make a favorable report. Although Colonel Sibert while in Peking had several interviews with the Minister of Commerce, Industry, and Agriculture, and also had audience of President Yuan Shih-kai, he made no formal report to the Chinese with regard to his observations in the famine area. No report will be made, in fact, until the one is complete for the Red Cross Society; but we have reason to believe that Colonel Sibert will recommend proceeding with the work. Then will come the question of finances. It will be remembered that a loan of \$50,000,000 (United States Currency) was talked of for this purpose, but the European conflict, with its wrecking of markets, is likely seriously to affect the chances of raising such a charity loan as that which will be required for Hwai River conservation work.

It is certain, in fact, that the development of the scheme will now be materially delayed, but the delay might well be advantageously availed of by China to make investigations which will be of great assistance to the engineers whenever the time arrives for the employment of human energies to overcome the whims of nature which now contribute to such periodical loss. China may, and should, begin at once to obtain data about her rivers. She should have done so long ago, but she has failed in that respect. Now that America has come forward with the explicit intention of assisting in harnessing one of her most erratic streams it is incumbent upon the Chinese to render as much aid as possible. The erection of gauges for the measurement of the rise and fall of river waters, and the registration of rainfall, are two of the simplest and yet most important steps that can be taken. China has signally failed in the collection of data illustrative of the character of her rivers and her rainfall. Missionaries have in some cases regularly recorded the rainfall, but something systematic and general is required. The Missionaries will be only too glad to render further aid to the Government in this direction; a fact which might easily be tested by an offer to supply various missionary stations with rain gauges. In localities where there are no mission stations Chinese in the Telegraph service might have the duty imposed upon them of keeping regular readings, and telegraphing them to some central recording station; and where there are no telegraph stations other officials might easily be selected for the work. A thorough record of the rainfall in given areas will be of the utmost value to any engineers engaged upon conservancy work, and if that is supplemented by accurate records of the heights of water at different places at different periods in given rivers the engineers will have information of tremendous assistance to them. The sooner the Government can appreciate this the better it will be. Nothing can be accomplished without painstaking preparation, but results will come quicker if steps are taken early.

CHINA'S RAILWAYS AND THE WAR

When it first became clear that all the Great Powers of Europe and Japan were involved in the War much pessimism

was felt in some quarters in regard to the prospects of railways in China. Great emphasis was laid upon the fact that almost without exception China's railways had been built, or were to be built, with money obtained from abroad. In view of the fact that, whatever the outcome of the War, the victors would suffer economically almost as much as the vanquished, it was pointed out that the money for railway development in China would not be forthcoming, at all events for a very long time.

There is, of course, considerable truth in these contentions, but we do not believe that the situation is quite so dark as it has been represented to be. The money for the construction of the Hukuang lines, or, to be more accurate, the amount that was deemed originally to be sufficient for their completion, has been paid up and is held in the Banks concerned at the disposal of the Government of China. As far as this system is concerned, therefore, there is no reason why the work of construction should not proceed irrespective of the happenings in Europe and in Shantung. This applies also to the completion of the Shanghai-Ningpo line for which ample funds are available. It is true that the agreements for the construction of new lines obtained by the Belgians, British, French, Germans and Japanese will necessarily be held up for some time, but there are other sources from which money can be obtained. The opportunity is open to America to assist China in improving her communications and there is no apparent reason why it should not be taken. In spite of the attitude taken up by the Wilson Administration in regard to the Sextuple Consortium, which led to the withdrawal of the American Group just as the success of the long and tedious negotiations was assured, we believe that any legitimate American enterprise in China would now receive the protection, if not the support, of the State Department. If that be so there is at least a possibility that the American financiers who understand the importance of extending American influence in this part of the world will be prepared to step into the financial breach.

Apart altogether from extraneous aid, China can do something with her own resources. The internal loan now being floated is being taken up with more readiness than was expected. It is true that a feeling of uneasiness still prevails among a considerable portion of the population, and that this is not conducive to the exhibition of implicit confidence such as is shown by investors in other countries. But the hopelessness of success attending any rising against the existing Government should be apparent. The great bulk of the people are desirous of peace. Especially is this true of the merchant class, who have nothing to gain and much to lose by a recrudescence of rebel activity. In such circumstances the uneasiness that exists should disappear, and it would cease the sooner if the moneyed classes recognised that financial support to the Government at this juncture would indicate to the rebel elements that the assistance without which their efforts would be useless would be given, not to them, but to those whom they wished to overthrow and supplant. The natural timidity of the Chinese might prevent for a while any considerable accretion of funds to the Government from domestic loans, but as the sense of security grows such a desirable outlet for money which is not now earning interest is sure to be utilized. Chinese Government loans for railway construction should in particular, appeal to the Chinese investor. He has the object lessons of the Railways of North China and the Peking-Hankow Railway to inspire him. Those lines do considerably more than meet their interest charges and there are others which are rapidly nearing the same satisfactory situation. If the Chinese will only show confidence in themselves and their country, there is no reason why railway construction should not proceed in spite of the stupendous struggle that is bathing Europe in blood.

THE CHOSEN RAILWAY

Owing to the irregularity of the express service on the Trans-Siberian route, caused by the present situation in Europe, the Chosen-Manchuria express between Fusan and Changchun, which has hitherto been operated three times a week, will be run once a week for the time being.

THE DEVELOPMENT OF DAIREN

AN EXPERIMENTAL BEAN MILL

Much of the wealth of both North and South Manchuria lies in its vast bean fields. It was only within recent years that the potentialities of the trade in beans were recognized and that the export trade began to be developed systematically. Until 1890 business in this product was purely domestic, but in that year a few shipments were sent to Japan and by 1907 the annual value of beans exported was about £600,000. In 1908 marked success attended the despatch of a trial shipment to England and as a result the value of exports nearly doubled. Of late years exports have been to a value of about £7,000,000, but last year there was some indication of the demand falling off.

While the market for the beans themselves has not fulfilled its earlier promise the demand for bean oil is ever increasing. In Japan there are a large number of bean mills for extracting the oil, notably that established some years ago by Messrs. Lever Bros. This mill is situated near Kobe. To some extent oil

extraction has been carried on in Manchuria, but the methods used were primitive and wasteful. A large percentage of the oil was left in the beans and this involved not only the direct loss of the oil not extracted, but the impairment of the bean cake that was made from the crushed material.

The South Manchuria Railway Company, whose policy has always been to assist in every possible way the improvement of existing industries in Manchuria, and the development of new fields for wealth production, decided that the importance of the trade in bean oil warranted the devotion of money, time and expert labour to improvement in the methods of extraction. As a result of this determination a handsome experimental bean mill

has been erected on the shores of Dairen Bay, west of the Inflammable Goods Pier. The site chosen meets the three main requirements, proximity to steamers, access to an abundant fresh water supply and isolation—in view of fire risks. The buildings contain crushing and extracting rooms, a refining house, offices, boiler house, etc.

The premises cost Y.100,000 and the machinery Y.250,000. The Crushing and Extraction Rooms are the largest and most important building in the compound of the S. M. R. Co. Experimental Bean Mill. The whole building is fire-proof, being made of steel trusses and concrete. It consists of two sections

separated by a partition. One is the Crushing Room and the other the Extraction Room. The Crushing Room is three-storeyed, whilst the other has only a sort of a gallery accessible by two flights of steel steps. The building has a frontage of 180 feet and a depth of 55 feet, with a floor area of 275

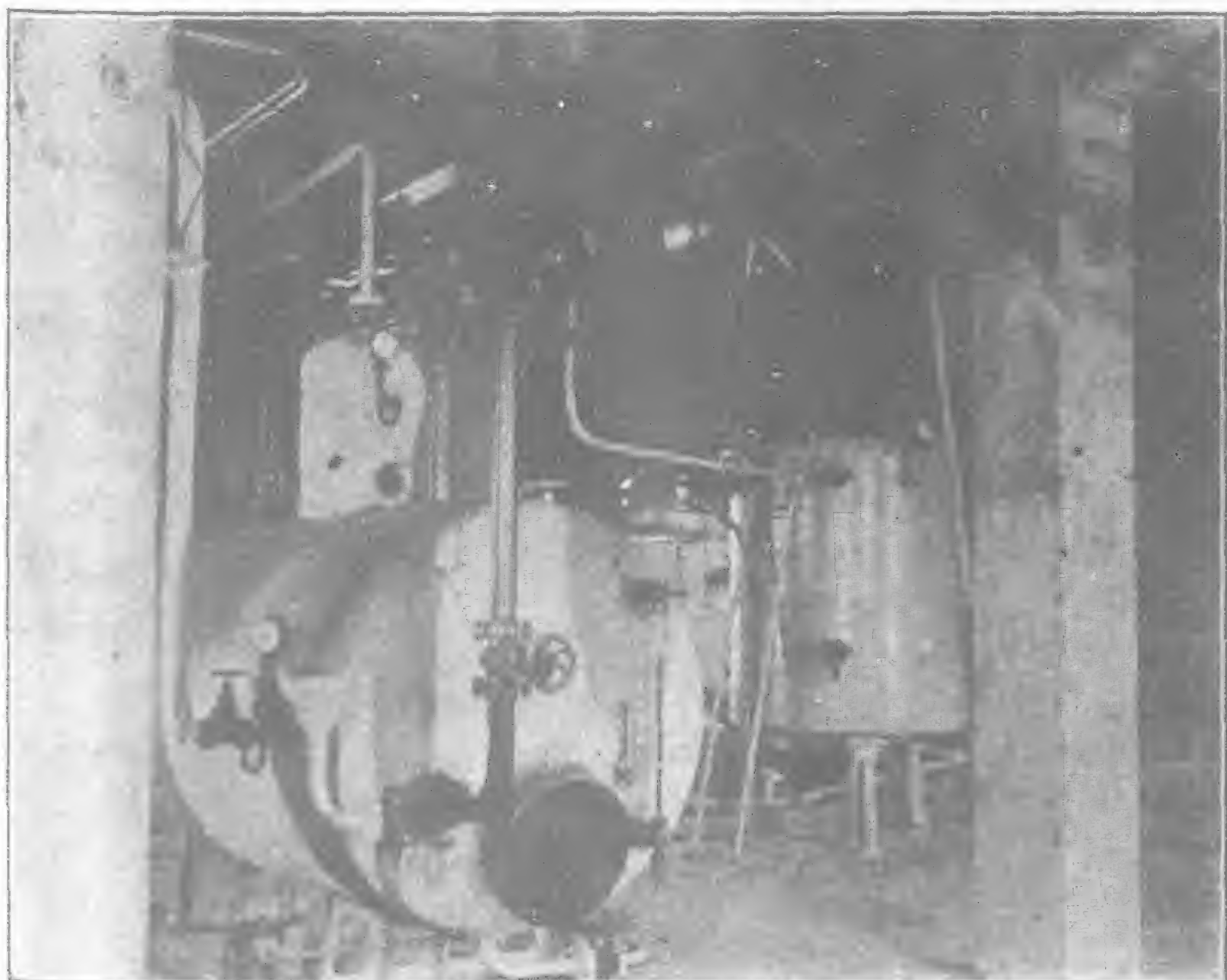
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General View of the S. M. R. Experimental Bean Mill.

CRUSHING ROOM

The Crushing Room faces southward slantwise to the front gate. On the third storey it opens into a covered passageway 110 feet long connecting it with the bean silo, or store-house, a building constructed of corrugated iron. Supplies of beans are brought right to the front of the store-house by rail. They are unpacked and are carried up to the level of the top floor of the Crushing Room by means of an elevator or, more correctly speaking, a chain of basket conveyors. The baskets empty their contents into a holder, which in its turn sets its contents loose on a band conveyor in a suitable quantity. The band conveyor moves



Bleaching Kettle.



Band Conveyor taking Beans to Crushing Room.



[Interior View of Extraction Room,

along the covered passageway into the Crushing Room where the grains are discharged into a holder with a capacity for 90 tons. Throughout it is a wonderful system of basket and band conveyors.

Beans in the holder are liberated through an opening in the bottom down a tube to roll over a sieve in order to get rid of the dust. Part of the dirt, if any, is absorbed by a dust exhaustor into a dust chamber. Then the cleaned beans go up to the top floor to come down by a screw conveyor to the first to be weighed by an automatic balance which automatically registers the weight of beans as they pass through it. They next go through preliminary crushers, of which there are two installed on the ground floor.

Two drying apparatus, each 20 feet long, are on the same floor. One of them is to dry beans and the other bean meal. Beans, roughly crushed, or, to be more exact, flattened, are dried in the steam dryer and then are sent down to the ground floor on which a row of five rollers awaits them to turn them into the form of meal. They are taken up to the top floor again and are discharged into a large holder to be carried through the partition by the band conveyor into the Extraction Room.

EXTRACTION ROOM.

A row of huge extractors stands to receive the raw bean meal transported by the band conveyor. The meal may be emptied into any of the extractors by means of the mobile hopper. It is in these extractors that the fatty substance contained in beans undergoes solution in benzine which is pumped into the extractors from the benzine reservoir installed in the ground just outside the building. After the extracting process has been completed, the solution of bean oil in benzine goes through a filtering operation to be relieved from the mealy mixture and then is put in the miscella tanks. This solution finds its way into a distillatory where the benzine is gassified and escapes with the steam vapor through the pipes into the condensers whence to return to the reservoir. The bean oil is treated under vacuum and rendered absolutely pure and free from the trace of benzine. Then it is led into the oil tanks.

The bean meal left in the extractors is thoroughly steamed, and then taken out of the openings at the bottom, and transported by screw and basket conveyors first up to the level of the top floor of the Crushing-Room and then through the partition into a large meal silo in the Crushing Room. It is sent below to the first floor and into the meal dryer by an oscillating feeding apparatus. The meal then is led into a hexagonal revolving sieve, fifteen feet long, and the finer meal is ready for transportation back to the bean silo by the band conveyor.

The coarser meal is put through a crusher on the first floor and then joins the finer meal.

The meal on arriving at the bean silo is received into a tube and is packed for the market into bags weighing between 120 and 150 lbs. each.

No packing is required for bean cake, which form the residue of beans assumes after the expression of oil, but the labour and time required for breaking the cake before applying it to the soil constitutes a disadvantage which ill makes up for the advantage of dispensing with packing cost.

BEAN MEAL.

The Bean Mill can put out bean meal suitable for either fertilizing or feeding purposes. The manure meal contains a high percentage of nitrogen and makes an excellent fertilizer for wheat, sugar cane, rice, and fruit trees. Its percentage composition follows:—

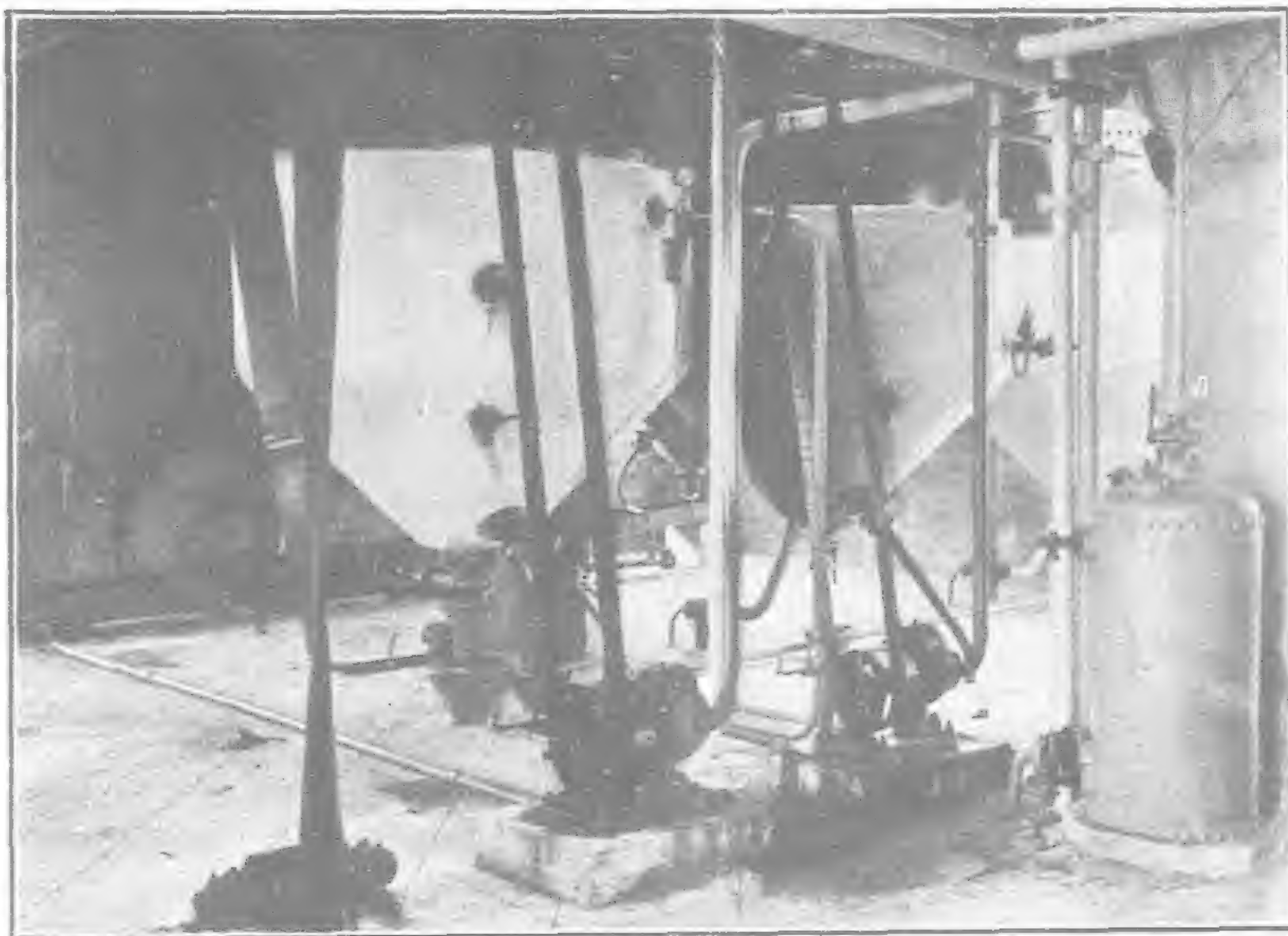
Nitrogen	..7.2—7.6%
Kali1.7—2.0%
	(calculated as K_2O)
Phosphor	..1.2—1.5%
	(calculated as P_2O_5)
Water7.3—9.5%

The feeding meal is pure and rich in albuminous substance with an appropriate quantity of fatty oil, the percentage composition being as under:

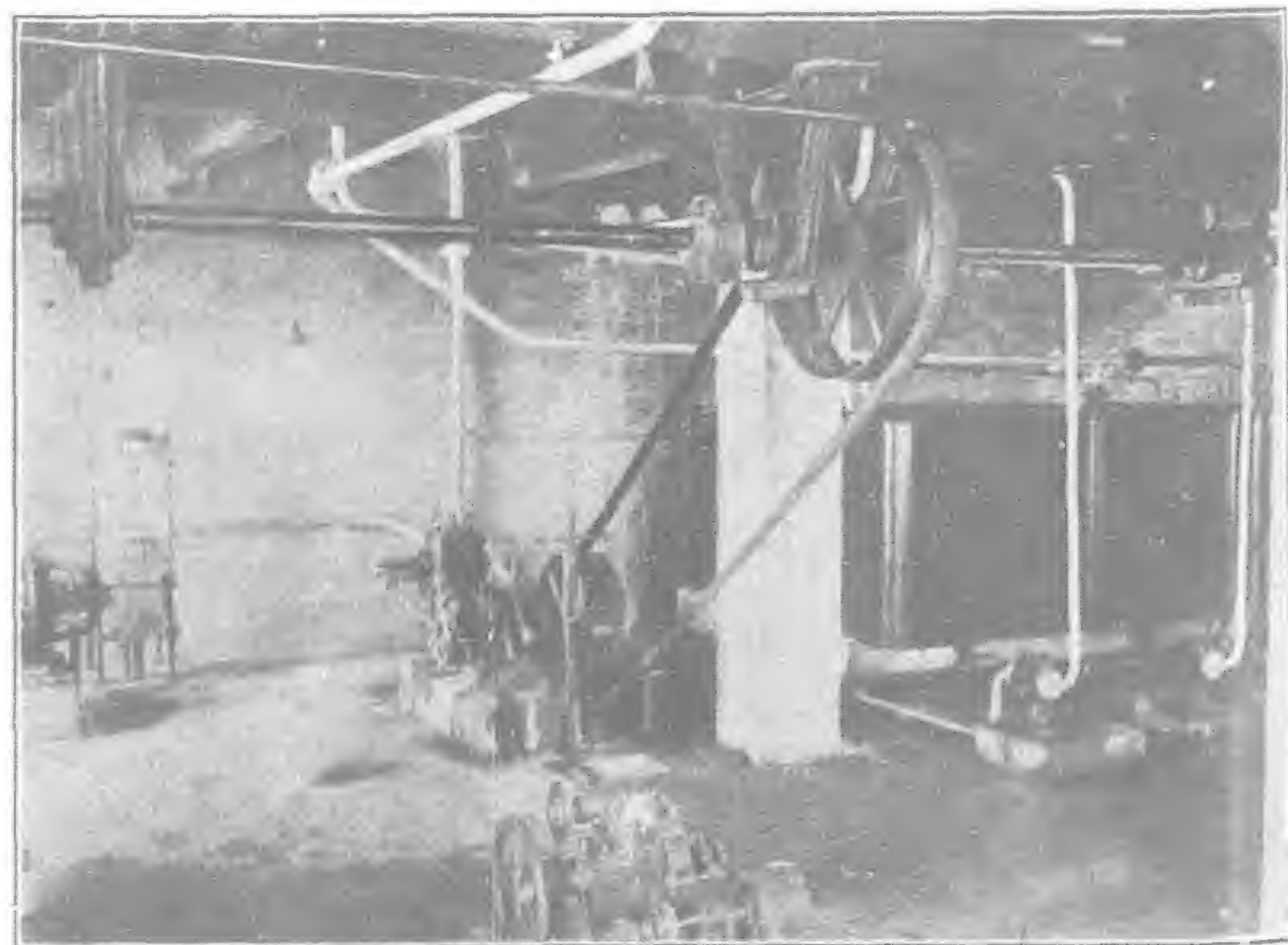
Fatty oil 3.2— 3.5%
Albuminoid	..43.9—47.0%
Water 7.3— 9.5%

The Bean Mill guarantees that the sum total of the oil and albuminoid in the bean meal is never less than 47%, which is the

standard requirement of the London Cattle Food Trade Association. The meal, containing a very small quantity of water and



Refining Tank and Neutralizing Tank.



Vacuum Pump and Motor.

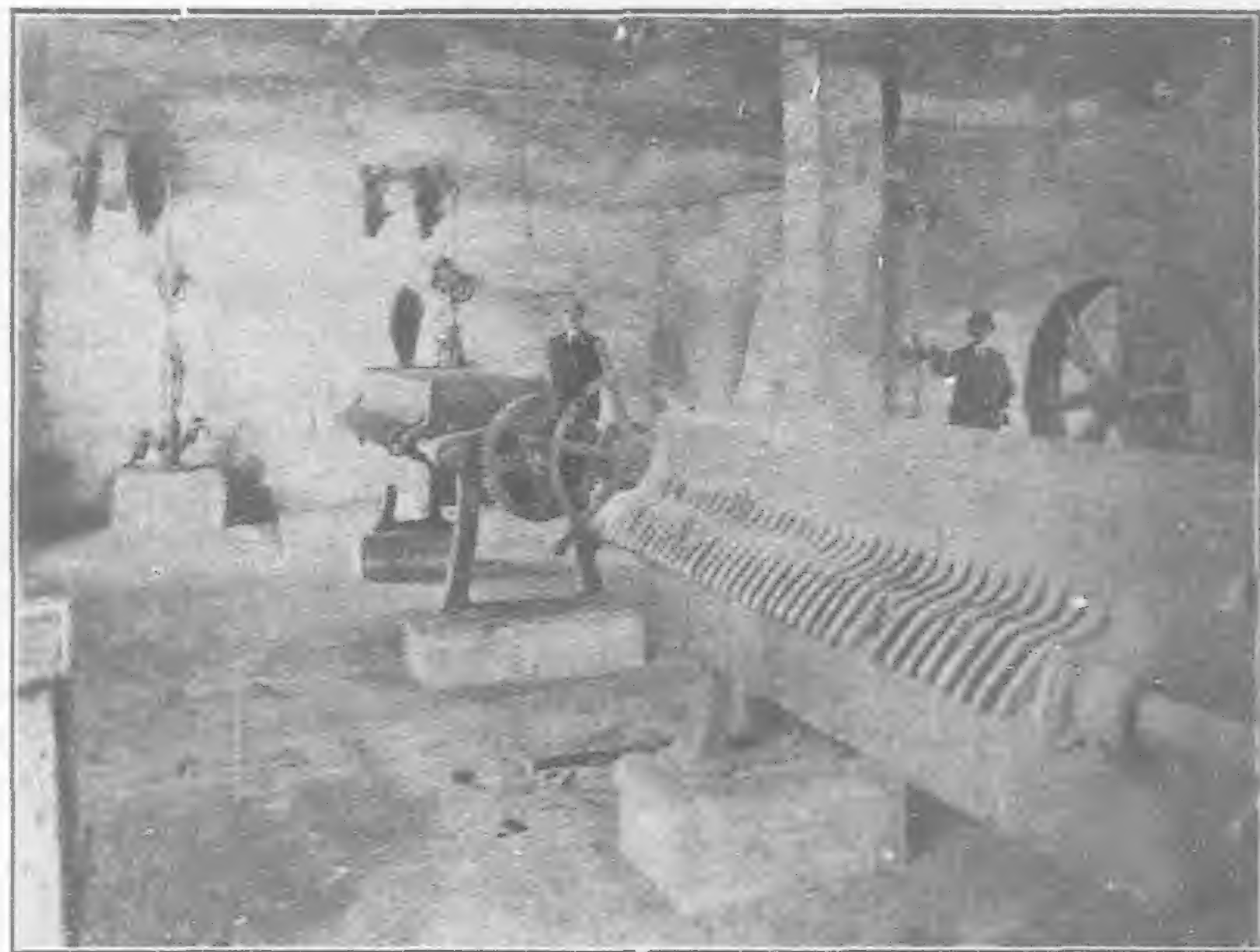
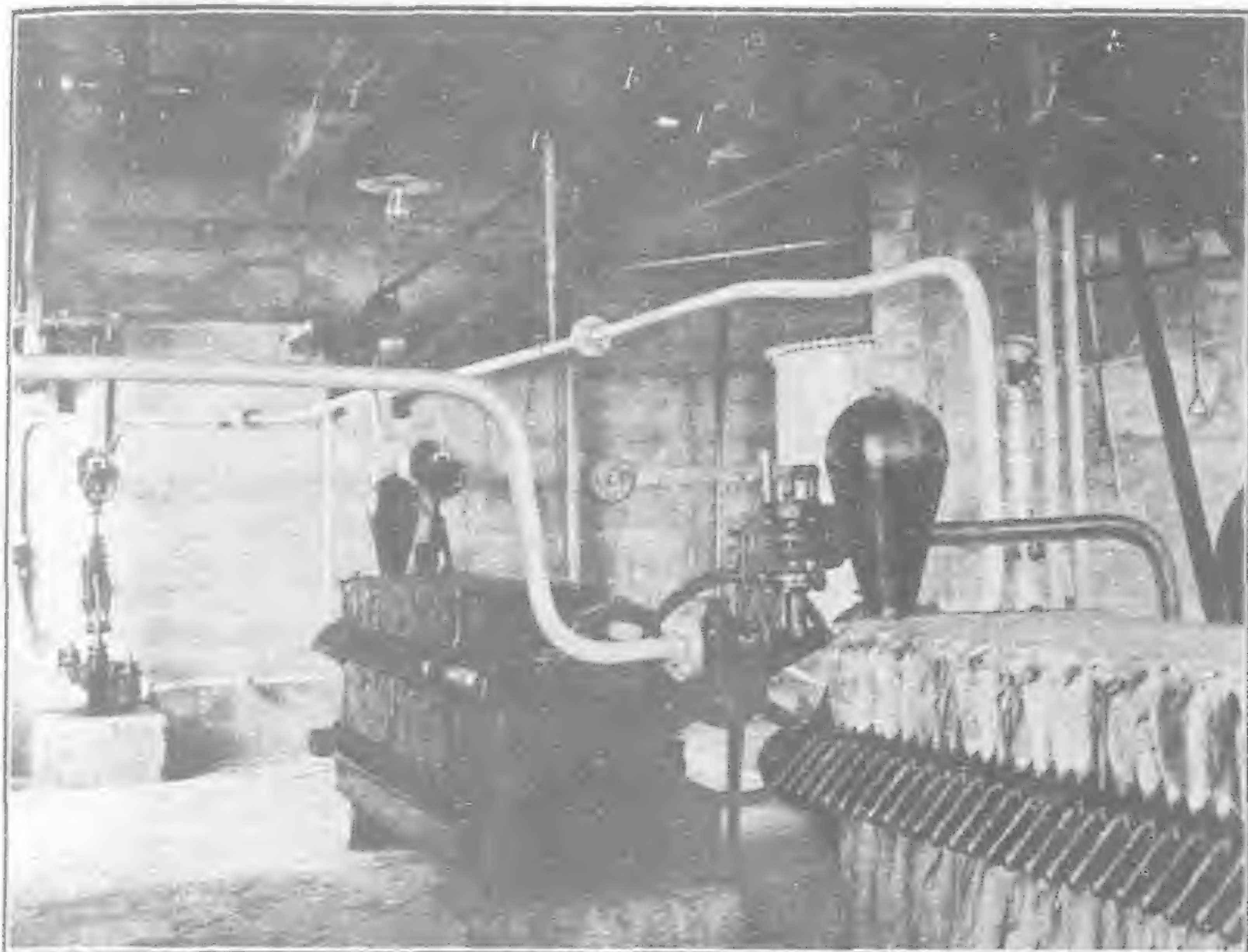
oil, is capable of withstanding the effects of tropical heat and will not deteriorate either in a torrid climate or under a prolonged storage.

REFINING HOUSE

As the Crushing Room contains a rotating system of conveyors, so the Refining House contains a system of piping through which bean oil is carried up and down in order to undergo sundry chemical and physical processes. It may well be likened to the alimentary canal of the human system with the notable difference that, whilst in the human system all the nutriments are absorbed from the contents of the canal, in this marvel of pipes

rises up to about a metre from the open top. The dregs run out of the apertures in the bottom ends of the cones into three tanks on the first floor. This thick fluid is sent down into a reservoir sunk underground just outside the building. It is used to make soap stock.

Oil, clarified from the dregs, is sent into a neutralizing or refining tank also on the gallery, in which it goes through a process of alkali refining in order to become absolutely pure and neutral. Next the oil is pumped into two washing tanks arranged abreast of the refining tank. In these tanks the oil is washed by water, which takes away the trace of alkali retained thereby.



Filter Presses.

and pumps, of which we now treat, all the extraneous and offensive matters are extracted from the contents of the pipes, and the remainder flows into the last tank on the ground floor, a refined oil, clear, bright, and sparkling, like amber, odourless and palatable, which is a peer of the product of any like plant in Europe. It contains free acid ordinarily to the extent of only 0.5 per cent. and never above 0.9 per cent. It constitutes a fine material for manufacturing edible oils.

Crude oil manufactured in the Extraction Room is pumped into two huge crude oil tanks installed in the annex adjoining the Refining House. The oil is then taken up to the gallery on the second floor on which three precipitation tanks stand in a row. Each is cone-bottomed and about three metres deep. A steam coil

The oil then passes through a large bleaching tank on the first floor, in which the contents are bleached to a straw-yellow colour by means of fuller's earth under a suitable height of temperature. Then the oil is deodorized in a distillatory installed on the second floor by a patented chemical process. Next the oil is led down to a cooler on the first floor so that an aroma may be imparted thereto to make it more palatable. The oil is then put through a set of filter presses in order to be released from the earth. It is next sent through the other filter presses to be completely liberated from the touch of what water there is still left therein, and thus it acquires a lustre. This puts the finishing touch to the oil, and it is then stored in the tank for refined oil on the ground floor.

THE DEVELOPMENT OF HANKOW

AN IMPORTANT AGREEMENT

An important agreement for a loan for the development of Hankow has been concluded between the Chinese Government and the Peking representative of Messrs. M. Samuel & Co.

The Agreement provides for the issue, as required, of a series of bonds to a total amount of £10,000,000 for the development of Hankow, the initiation of enterprises of industrial importance to that city and the construction of a bridge or tunnel connecting the north bank of the Yangtze with Wuchang. Other works the cost of which will be met by the loan are the construction of a bridge or bridges to connect Hankow and Hanyang and a canal with the necessary bridges between the Han and Yangtze rivers at the back of Hankow city.

The issue of bonds will take place at the end of the war at rates to be determined by the market conditions obtaining at that time. Preference for British materials, having due regard to quality and price, is provided for, and the London office of Messrs. Samuel & Co. are to act as agents for the supply of the materials required.

PHILIPPINE FOREST CONCESSIONS

The Bureau of Insular Affairs, Washington, announces that while there are 200,000,000,000 board feet of merchantable lumber standing on the 60,000 square miles of Philippine public forests, in 1913 there were milled the small total of 80,000,000 feet, of which less than one eighth was exported. The insular director of forestry believes that there is an export market awaiting the establishment of milling enterprises, which would take 300,000,000 feet yearly, mainly of four woods—lauan, apitong, guijo, and yacal. These trees grow to a very large size. A large number are found on a limited area, and their extraction affords an attractive enterprise for a modern logging and milling operation. These public forest lands in the Philippines are not sold, but are developed under a license system. Yearly licenses are ordinarily given small operators for limited areas. The larger tracts are offered in the form of 20 year exclusive licenses, which provide for the removal of timber and minor forest produces without affecting the title to the land. At present 11 such exclusive licenses, popularly called concessions, are in operation, representing American, British, Chinese, German, Spanish, and Filipino capital. A recent timber concession was granted to a Chinese company that will find no difficulty in disposing of its products through its connections in China while the British and German interests find their markets for Philippine woods in India and Europe as well as in China. The Forestry Bureau now has available a number of tracts, ranging in size from 35 to 300 square miles, with one or two of much larger size, awaiting applications.

CHINA'S NEW MINING REGULATIONS

CRITICISM BY THE FOREIGN PRESS

The publication of China's new mining regulations has attracted the attention of the foreign technical press and others. We reproduce three of the articles published on this subject.

The following is from the *Mining Journal* (London):—

We have received recently from correspondents in China copies of the new mining regulations published by the Chinese Government on March 11 last. These are stated to be specially translated by the *Peking Gazette*, but we do not know whether they are to be regarded as an official translation or not. A version is also published in the *Far Eastern Review* of last March, which differs substantially on some important points from the version which we have received. Again, a third version appears in the *Chinese Review* for June. It is therefore obvious that those interested in the question must bear in mind that, as there is no provision such as that inserted in the recent contract between the Chinese Government and the Standard Oil Company recently—that the English text shall be authoritative—they may possibly invite trouble if they do not study the official text. Even if we carry the matter no further than the first two versions in English which we are considering, the *Far Eastern Review* version is certainly decisive of some of the difficulties appearing in the *Peking* text; but as the regulations as a whole are accepted by our Shanghai contemporary as highly satisfactory, it is difficult to judge whether the translator has permitted himself some latitude of interpretation instead of adhering to a strictly literal rendering of the text. Even apart from these very necessary provisos, the regulations offer many points for criticism from the point of view of foreign interests in relation to mining enterprises in China.

It will no doubt be remembered that so far as this country is concerned commercial relations were largely remodelled under the Mackay treaty, which was finally ratified September 5, 1902. Article 9 of that treaty dealt with mining affairs and was as follows:—

The Chinese Government, recognising that it is advantageous for the country to develop its mineral resources, and that it is desirable to attract foreign as well as Chinese capital to embark in mining enterprises, agree within one year from the signing of this Treaty to initiate and conclude the revision of the existing Mining Regulation. China will, with all expedition and earnestness, go into the whole question of Mining Rules, and, selecting from the rules of Great Britain, India, and other countries regulations which seem applicable to the conditions of China, she will recast her present Mining Rules in such a way as, while promoting the interests of Chinese subjects and not injuring in any way the sovereign rights of China, shall offer no impediment to the attraction of foreign capital, or place foreign capitalists at a greater disadvantage than they would be under generally accepted foreign regulations. Any mining concession granted after the publication of these new rules shall be subject to their provisions.

A somewhat similar article, though conferring more restricted rights, appears in a similar treaty between China and the United States of October 8, 1903. Generally speaking the provisions in the Mackay treaty have been looked upon, at any rate in this country, as determining the lines upon which foreigners should be granted participation in the mining industry of China. The mining regulations sanctioned on March 17, 1902, after the discussion of the provisions of the treaty, provided that either Chinese or foreigners or a partnership of both might petition for the privilege of opening a mine, but all were subject to the mining regulations of the Imperial Chinese Government. The new Mining Enterprise Regulations just promulgated seem to us restrictive of foreign rights, since the subjects of nations possessing treaties with China may secure mining rights only when in joint business with Chinese subjects, and on undertaking through their diplomatic representatives to be bound by these regulations and other laws connected with them. It would be of much interest to learn whether our Government is satisfied that the new regulations fulfil the condition inserted in the Mackay treaty, and if not, whether they are making any representations on the subject.

Turning to the regulations themselves, they do not strike us as the work of men familiar with the practice of mining or with the legislation existing in leading mining communities, and whatever may be the case with regard to the Chinese themselves, European capital is not likely to be attracted into the country by the issuing of new regulations unless they be of a character which can be understood and appreciated. The rules contemplate grants for "mining enterprise," which includes prospecting, actual mining, and other business connected with them, and of "Mining rights," which are defined as rights to prospect and operate mines. Construing the terms of the regulations strictly, operations such as smelting, piping, and the like would appear to be excluded from the mining right, and we cannot find any section conferring the right of mining enterprise upon foreigners. Are these regulations, therefore, not complete in themselves as determining the position of foreign interests in regard to the mineral industry? Again, there is a classification of "minerals" into four classes, which appears to suffer through defects usual in such arbitrary classifications. Those of the first class are almost entirely metals, but include coal, diamonds and precious stones. Class 2 also includes diamonds and a considerable number of earthy minerals. Class 3 consists mainly of limestone and structural material; while Class 4,

consisting of salt and kerosene oil, are reserved for Government exploitation. It is obvious that numerous difficulties might arise in the construction of these clauses. Apart from the inclusion of diamonds in two classes (which we should say does not appear in the version of the *Far Eastern Review*), how are we to class petroleum, which might be made to yield pitch, heavy fuel oil, lubricants and gasoline, and little or no kerosene? Then, again, might not the sulphur in a highly pyretic ore be considered as determining the class rather than a small content of gold, copper, iron, &c.? Possibly the difficulty may be only due to faulty translation, but it must be borne in mind. It is provided that minerals not specified may be classified by the Minister of Agriculture and Commerce, but as the rate of taxation varies with the class it would be more satisfactory to be assured on the point in advance.

An important point not determined in the regulations is the ownership of mineral rights. By Article 8 no permit from the authorities is required in the case of "the various mineral resources owned by the public." Our contemporary, the *Far Eastern Review*, states, in commenting on the regulations, that mineral deposits are now declared as belonging to the State, but we do not know on what authority this statement is made. There is obviously material for much litigation on a point such as who are the owners of mineral rights in a particular instance.

The regulations appear to contemplate, though not in express terms, two stages—viz., prospecting and mining. Permission must be obtained from the Government to start operations, but it does not appear that there is any means of compelling the officials to grant such permit, though in the case where the grant of the right to mining enterprise is refused an appeal may be made to the Minister of Agriculture and Commerce from an adverse decision. When the Government's sanction to prospect or work mines is given, a mining area is constituted, the extreme limits of which are 10 square li or say 3 miles for coal, and 5 square li or $1\frac{1}{2}$ square miles for other minerals. Mining rights when acquired cannot be surrendered to others in part. We do not know the effect of such a provision on the frequent practice of disposing of a portion of a property to another company.

Curiously enough no provisions are made as to the beaconing of claims or their survey, though maps and plans of the interior of the mine must be kept, and if not followed involve forfeiture of the mining right.

After the necessary permit to prospect is given a period of two years is permitted, and within which a petition to operate the mine must be presented. The authorities must be satisfied that the place is suitable for mining operations. Succeeding sections deal with possible difficulties which may arise before a petition to operate a mine is granted, but as the text of the two versions varies considerably, and the procedure is in any case somewhat obscure, we cannot go further into details.

Article 46 provides that a mining right shall be cancelled if operations are not begun within a year or are suspended for that time; if the enterprise injures public interest; if police orders as to precautions or suspension of operations are not obeyed; if plans and descriptions are not followed; if the mining tax is not paid when due; or, finally, if sanction has been given to mine under mistake. According to the *Far Eastern Review* version an appeal against cancellation may be brought before the Minister of Agriculture and Commerce from the cancellation of a mining right, but in the *Peking* version such appeal is confined to the right of mining enterprise.

Considerable provision is made for the miner obtaining the necessary way-leaves to operate his property, and in the event of surface owners being hostile an appeal is given to the mining authorities.

Mine owners must make provision for workmen who are injured in the course of their employment, and the hours of labour may be regulated by the Minister of Agriculture and Commerce.

Taxation consists of a tax on the mining area in addition to the land tax and a royalty. The rate of the mining area tax is 30 cents per annum for each mow (800 square yards) for minerals of class 1, and 15 cents for minerals of class 2. The royalty is $1\frac{1}{2}$ per cent. of the market price on the mine of ores under class 1, and 1 per cent. on ores of class 2.

Article 86 gives power to compel the mine owner to employ experts or to change those employed.

By Article 93 foreigners who may have been partners of Chinese citizens in mining or employed by them must settle their disputes under the decision of the Director of the Mining Supervision Office.

In conclusion, it is provided that these regulations come into force from the date of promulgation which, as we have mentioned, was March 11 last—and within six months all the mines holding previous certificates must submit petitions for re-registration in accordance with these regulations—but the contracts and agreements made previously for the raising of foreign capital for the development of the mines are to continue in force as before.

As we have said, these regulations do not strike us favourably; they appear confused and arbitrary, as well as incomplete in many directions; but what is most important is, what organisation is created to carry them out? With goodwill difficulties may be smoothed over and amendments made. While there is a Mining Supervision Office, and even a European

Mining Adviser in the person of Mr. Andersson, a Swede, the ultimate decision in most cases rests with the Minister of Commerce and Industry, whose practical acquaintance with mining is an unknown quantity. Perhaps the most important provision is that which requires at least a half participation by Chinese interest in every mining enterprise. The *Far Eastern Review* claims to be informed by the Minister of Commerce and Industry and by the head of the mining department that where the Chinese fail to subscribe a moiety foreigners may subscribe the balance. If this be so the administration does not seem to know its own mind, as the assurance is in flat contradiction of No. 4 of the general rules. This rule is also in contradiction to the policy which the Chinese Government has itself adopted in regard to its contract with the Standard Oil, which gives that company 55 per cent. of the capitalisation, with a possible still further increase. In view of the great mineral resources of China and the rapidity with which such can be made productive of large revenue, which China is so urgently in need of at the present time, we think that the Government has certainly been ill advised in many provisions of its fresh regulations, for while undoubtedly some improvement on older regulations, which were generally accepted as frankly dilatory in their character, they are not such as it seems to us foreign capital is likely to consider favourably. China is far more likely to get rid of the concession hunters whom she fears by adopting an impartial system of mining tenure for all comers than by embracing a system which forces her, for lack of revenue, to give such a monopoly as that recently arranged with the Standard Oil Company.

The *Mining and Scientific Press* makes the following comment:—

Many of our readers will remember that in the treaties which were made following the outbreak in 1900, it was specified, among other things, that China should prepare a code of mining regulations which would permit foreign capitalists to enjoy the same rights in China as they do in other countries. This was especially provided in the Mackay treaty of 1902. In carrying out the terms of this treaty, delay after delay has occurred. Sets of regulations have been drawn up by bureaus at Peking and submitted to the representatives of the treaty powers, only to be rejected. In the latest reorganization of the government at Peking, Chang Chien has been appointed Minister of Commerce and Industry, and has created a Bureau of Mining, of which D. T. Yang is the head, and the distinguished director of the Geological Survey of Sweden has been appointed adviser to the Mining Bureau. Minister Chang has exhibited a great deal of interest in the development of the mineral resources of China and has given out various suggestions as to their development. Among others, a new set of mining regulations has been drawn up. These have to be submitted to the treaty powers, but they are so much an improvement over any that have previously been composed that they stand some chance of being sanctioned. The regulations are too detailed and require too much space to give in full, but it will be worth while to summarize some of the most important features.

Chapter I covers general rules and provides that citizens of the Republic of China may secure mining rights, and citizens of foreign nations may also secure them when doing joint business with citizens of China. Foreigners wishing to engage in mining must present to the Director of the Mining Supervision Office a certificate by their consul showing that they are willing to abide by Chinese mining regulations. Salt and petroleum are reserved as government monopolies, but the various other kinds of mineral substances are open to general exploitation. In the case of coal, metals, and precious stones, the mining rights are separate from the ownership of the land. In the case of the non-metallic minerals the ownership of the mining rights goes with the ownership of the land.

Chapter II defines areas on which mining may be conducted. As in all previous regulations, it is provided that mines may not be opened in close proximity to tombs, temples, fortifications, and public utilities without permission. The distances, however, are much decreased, a maximum of one-third of a mile now being the rule. It is provided that the claims shall be bounded by vertical planes. A coal-mining area is allowed a minimum of 54 acres and up to 1,180 acres. The areas allowed for other mines vary between 10 acres and 540 acres.

Chapter III deals with mining rights. This contains a great many clauses, and is rather complex. It is interesting to note that the petitioner for a mining area must prove that the area for which he applies does contain the mineral which he wishes to exploit. Provisions are made for conflicts and also for the exploitation of two different minerals in the same area by different groups. Where more than one person applies for mining rights for the same area, they must be given to the first applicant. There are possibilities for a good deal of difficulty in the regulations. Thus, for example, Article 20 says "mining rights should not be surrendered to others in part." What effect this might have on the sale of stock in a mining company is open to question. Similarly, Article 44 says that the operators of mining enterprises "should from time to time submit the working plans, drawings, and explanations, to the Director of the Mining Supervision Office for decision. The possessor of the mining right shall operate the mines according to the plan and description passed by the Director of the Mining Supervision Office. With regard to the plan and description for the above, no change shall be made without the approval of the Director of the Mining Supervision Office."

The presence of such a trouble-making clause in the regulations is, of course, clear evidence that the persons who drew them up are without any competent knowledge of mining. It would be entirely impossible for any government bureau to undertake the detailed supervision of the work of operating every mining company in China. The greatest difficulty, aside from the delay which might be entailed by an attempt to enforce this clause, is the fact that neither the Minister of Commerce nor the present head of the Mining Bureau has any knowledge of mining whatever, Mr. Yang being a graduate of a law school in Japan, and it is

highly probable that such a condition is likely to persist. The difficulties of a company which tries to secure approval of its plans from officials who know nothing of mining are easy to imagine. The mining right may be canceled if the operations are not conducted with reasonable diligence, if the tax is not paid, or if suitable precautions for the safety of employees and the public are not followed. It may also be canceled "if the plans and descriptions submitted are not followed" or "if the mining enterprise injures the public interest." It is evident that these last two provisions open a fertile field for the oppression of mining operators by the officials, and, indeed, the whole series of regulations have the air of being drawn up more with the idea of developing 'squeeze' than of developing the mineral resources.

Chapter IV deals with the land used for mining purposes and provides that the proprietor of the mine may, under proper regulations, use the land of others in order to carry on his own necessary operations. An adequate security may be demanded by the owner of the land for any such use of his property. Chapter V deals with miners, their duties, wages, compensation, injury, and so on.

Chapter VI deals with mining taxes. It provides for two classes of tax: on the area and on the output. The area tax for metal mining amounts to \$0.45 per acre per year. This is in addition to the ordinary land tax, which is paid everywhere throughout China. On the product of metal mines, 1½ per cent of the market price at the mine shall be collected as tax. For non-metallic minerals, 1 per cent. is collected. The regulations do not clearly explain whether the tax is on the gross or net value of the output.

Chapter VII covers provisions for policing the mines, and it similarly contains clauses which might lead to a good deal of difficulty on the part of the operator. Thus article 86 provides that the Minister of Commerce or Director of the Mining Bureau may demand the employment or change of experts employed by the mine operator. Chapter VIII deals with judgments, complaints, and lawsuits. Article 93 provides that if foreign citizens in partnership with Chinese citizens in mining affairs have any dispute, the case must be settled by the decision of the Director of the Mining Supervision Office. It is scarcely probable that in the present state of government in China the treaty powers will agree to any such stipulation as this.

Chapter IX deals with punishments for violations of the provisions of the regulations, and closes with a provision that contracts and agreements previously made for the raising of foreign capital shall continue in force according to the conditions under which they were made.

While on the face of it the new regulations look much more favorable than any that have so far been proposed, as a matter of fact they fall a long way short of leading in any practical degree toward the adequate development of Chinese mineral resources through the aid of foreign capital.

An editorial comment is made by the *Hongkong Daily Press* in the following terms:—

China's Mining Regulations are fast becoming proverbial: it would be interesting to ascertain how many fresh editions there have been during the last ten years, but it would require a very skilled and patient investigator to discover in them any evidence of a serious attempt to grapple with a real need. The process of their production must by now be practically mechanical—scarcely a year passes without an announcement, with a great flourish of trumpets, that the whole matter is to be dealt with *de novo* and that workable rules are at last to be introduced, and then, when the period of gestation is accomplished, there is given to the world a *rechauffe* of the old discredited regulations decked up with a few fine phrases. It is no surprise to see a few days ago that "Chang Chien has requested the President to examine the new Mining Laws and to introduce a searching revision," but it needs no great prophetic gift to forecast what the result of this investigation and revision will be. It has become a fixed article of faith with China's statesmen that, whatever else may be changed and modified, those provisions of the Mining Regulations that make foreign participation impossible must in their essential features remain intact. That this policy involves a breach of international faith does not cause them the least misgiving; they regard it as quite immaterial that China is by Treaty bound to recast her Mining Law "in such a way as, while promoting the interests of Chinese subjects and not injuring in any way the sovereign rights of China, will offer no impediment to the attraction of foreign capital nor place foreign capitalists at a greater disadvantage than they would be under generally accepted foreign Regulations." It is, we are aware, fashionable to regard the Commercial Treaties of 1902 and 1903 as being to a large extent a dead letter, but they have never been in the slightest degree cancelled or modified, and until they have been thus formally abrogated, they are valid, and China is, by all international usages, as much bound to keep her promise with regard to the admission of foreign participation in the development of her mines as, say, Great Britain is to fulfil the stipulations of the 1911 Agreement for the cessation of the Indian opium trade. China always shows herself a strict creditor in demanding the most exact fulfilment, and even a little more, of Treaty obligations by other Powers, but her views change diametrically when it is a question of keeping promises herself. The whole matter has been threshed out again and again, and there is now little hope of China ever voluntarily redeeming her pledged word in this connection. It is difficult indeed, to contemplate China's attitude without despair: there is no possibility of her mineral wealth being utilized through the agency of Chinese capital, yet her one aim and object is to make impossible the employment of foreign capital for the purpose. No Chinese mine-owner possesses sufficient funds to sink shafts, instal pumping and winding machinery, and make all the other improvements and innovations that would be

requisite if his mines were to be worked to an adequate degree of efficiency, nor would any Chinese capitalist be anxious to embark on an enterprise that must, in the best of circumstances, keep his capital locked up for several years before he could look for any return. Such funds could only be raised by a syndicate, but that is a form of enterprise of which the Chinese are, with reason, very shy, for not only does it involve entrusting a few people with the handling of large sums of money, but the concentration in one spot of a large amount of capital would be an irresistible temptation to rapacious officials with capacious pockets. Hence the only possibility of salvation lies in attracting foreign capital, either by means of concessions or of joint foreign-Chinese companies, but that is the very thing that China makes, in her Mining Regulation, every effort to prevent. It is all an old tale, and our only excuse for reverting to it is the necessity of never allowing China to forget that she has, in a formal and binding international instrument, solemnly pledged herself to recast her Mining Regulations "in such a way as while promoting the interests of Chinese subjects and not injuring in any way the sovereign rights of China, will offer no impediment to the attraction of foreign capital nor place foreign capitalists at a greater disadvantage than they would be under generally accepted foreign Regulations."

THE FISHERIES OF MINDANAO AND SULU

BY DR. ALVIN SEALE, BUREAU OF SCIENCE, MANILA

The Governor of the Department of Mindanao and Sulu has under his care two great farms. One is on land and grows coconuts and other things, the other is in the sea and grows pearls and other things.

The land farm is considered as doing well if it employs 500 men and pays all expenses. The sea-farm employs over 5,000 men and last year its harvest was valued at P.2,000,000.

We are naturally the most interested in the principal product of our farm, therefore we will consider the pearl fisheries first. The pearling fleet at the present time consists of 73 vessels. These secured, during the past year, pearl shell to the value of P.349,478 and pearls with a value estimated at P.1,000,000. The cost of harvesting was P.266,400 and nine human lives.

The life history of the Philippine pearl oyster in brief is as follows:—The mother shell gives off into the water thousands of minute round egg cells. Should these by chance meet the microscopic cells given out into the water by the male oyster they become fertile and proceed to grow. They develop small hairs which enable them to swim about, and are doubtless carried many miles by the tides and currents. The shell begins to form at the end of the second day, and in about 8 days the young oysters settle down and attach themselves to whatever offers. They seldom move far from the place where they attach. They continue to grow for ten or twelve years, although they are sexually mature in two years and attain the legal size of 7 inches in four or five years. The rapidity of their growth depends largely on their location and the abundance of the small microscopic marine animals upon which they feed.

For its proper growth, the Philippine gold-lip pearl oyster requires a warm, shallow sea of from 1 to 400 feet in depth where the ocean currents are strong and the specific gravity of the water is about 1.0201. The bottom must be of sand or coarse gravel made up of dead coral or broken shells.

Practically all of the area from Mindanao to Borneo is one great pearl bed. The most productive portions, however, are more or less localized and centered about various islands.

Some of these pearl beds lie in shallow water and have been fished constantly for over 100 years. One would naturally expect such beds to be exhausted; such, however, is not the case. I was on a pearl boat operating directly in front of Jolo, and for the first dive 12 shells were secured, at the second dive 7, and third dive 7. In all 26 shells were secured in 60 minutes of actual work. The average weight of the shells was 1 kilo each. The value was P.20.00. 2 small pearls were found.

The explanation of the fact that the shallow water beds have not been exhausted after many years of fishing lies in the fact that they are constantly supplied with young shell from adjacent beds in water too deep for the divers to reach. Such I found to be the case in the Jolo beds, and no doubt it is true of the others.

All of the pearl beds are surrounded by areas of deep water where there is an abundance of adult shell. All the divers tell of the beds seen by them in waters too deep to work. These form the *mother beds* and from them are given off million of young pearl oysters which are carried by the tides and currents all over the waters of the archipelago. No doubt many are carried into great depths and lost, others are smothered in the sand or thrown ashore to die on the beach, but many settle on the shallow beds and keep a constant supply of oysters coming on toward maturity. I believe that with the present system of fishing, where the diver can only work in water of 25 fathoms or less, there is no great danger of the pearl beds becoming exhausted.

The Philippine pearl oyster yields a high percentage of pearls. The pearlers can usually pay all running expenses by the sale of the shell and the pearls are regarded as clear profit.

The Japanese are the only people who have, up to the present time, made a commercial success of the pearl oyster farming and the growing of

culture pearls, their method, in outline, being to insert some foreign body in the living oyster. This body is covered by layers of the pearl-forming fluid called "nacre" which hardens and forms a pearl. The method of growing pearls of as good a luster and shape as those found in nature, however, was perfected only last year by Professor Fujita of the Imperial University of Tokio.

The pearls and pearl shells, however, are but a portion of the harvest of the sea-farm. We have in addition, trocha or top shell valued at P.103,595, dried fish valued at P.69,721, trepang valued at P.35,107, tortoise shell valued at P.34,947, turbon shell valued at P.21,800, and shark fins valued at P.16,088, besides fresh fish with estimated value of P.300,000. All of which helps to swell the total value of the sea harvest to over P.2,000,000 per year.

Now let us consider for a moment how these facts can be turned to the profit of the local community, and help in establishing permanent prosperity in Zamboanga or Jolo. Each pearl boat uses an average of P.60 worth of commissaries each month; the entire fleet, therefore, spends for this item alone over P.4,300 per month, chiefly in the local stores. The larger portion of wages of all the employees on these boats is spent locally. This amounts to about P.135 per month for each boat and gives a total of over P.200,000 per year.

Now there are other industries which could be easily built up from fishery products, and I wish earnestly to recommend these to the attention of local people. Take for instance the item of tortoise shell. P.35,000 worth is exported from the Department and as much more from northern ports. This goes to Japan where it is manufactured into combs, ornaments, etc., and after paying 50% duty is sold at a good profit in the United States. A small factory operating in Zamboanga or Jolo would require a very small outlay of capital and this 50% duty would then be clear profit. Or take the sardine industry. Sardines to the value of P.500,000 per year have been imported into the Philippine Islands and yet the water of the Islands swarm with excellent sardines. Here is what should be done. The people prefer their sardines put up in tomato sauce. Very well, San Ramon grows the best tomatoes I have ever eaten. The desire of the Government is to stimulate agricultural enterprise. Let San Ramon or the people grow the tomatoes, start a factory combining the manufacture of tomato sauce and canning sardines; this will give two products to put on the market for each of which there is an active demand. Or take the sponge industry. I found the New York sponge dealers saving even the little scraps and trimmings from sponges, because there were not enough sponges to supply the demand, and here are the waters of the Sulu Archipelago with an abundant supply of good sponges to be had for the gathering and curing. If this is done in a careful manner, and the sponges are graded and carefully marketed, a fair profit could be secured from them.

Success in any of these enterprises requires just what is required in any successful commercial undertaking, and that is a good mixture of ginger, capital, and common sense.

RECLAMATION SCHEME IN BRITISH NORTH BORNEO.

The Chairman of the British North Borneo Company speaking at the 63rd half yearly meeting in London on July 14 said: With regard to the Jesselton reclamation scheme, which is being carried out by contract, and which comprises, *inter alia*, land reclamation (which should be very remunerative), the improvement of Jesselton Harbour, and a water supply for the town, I hope it will result in Jesselton's becoming a favourite port of call for vessels *en route* to China and elsewhere, and take the place which was formerly occupied by Labuan. The work has not been carried on with the celerity which we expected, but it is now being proceeded with more rapidly than was the case until December last. The 106 families which comprised the first batch of Northern Chinese immigrants have settled down very comfortably, and I understand that Dr. Sia, who was deputed by the Chinese authorities to accompany them, is satisfied with the conditions under which they are living. The Court have been in correspondence with the Governor regarding the introduction of a further contingent but no definite steps have yet been taken in that direction. But the success of the experiment seems to be assured, and there is every reason to hope that the scheme will be pursued on an increasing scale from time to time. The principal doubt was whether the Northern Chinese—whom we specially desire to introduce as settlers, because of their industrious habits and knowledge of agriculture—would be able to stand the climate of North Borneo, but this doubt, I may say, is practically dispelled.

Messrs. Andersen, Meyer & Co., of 4 and 5 Yuen Ming Yuen Road, Shanghai, have accepted the agency of the National Carbon Co., of Cleveland, U.S.A.

PANAMA-PACIFIC INTERNATIONAL EXPOSITION

BREAKING GROUND FOR THE CHINESE VILLAGE PAGODA AND TEA GARDEN

China, the newest republic, gave the citizens of the United States an example in ground breaking exercises on "The Zone" of the Panama-Pacific International Exposition on July 17. It was the prettiest ceremony that has marked the pre-exposition period and several thousand persons gathered around the roped-in area to see the mingling of old and new world customs.

The day marked the formal beginning of the Chinese Village Pagoda and Tea Garden, which is to have an attractive corner on the 65 acres given over to concessions. The program at the site was preceded by a parade of several hundred in gaily decorated automobiles through the business streets of San Francisco.

Consul General S. C. Shu, of China, was one of the speakers. Representatives of the governor of California, the mayor of San Francisco and of the Exposition made short addresses. R. T. Park, managing editor of the *Chinese World*, was master of ceremonies.

Chinese girls in native costume sang "I Love You California" and "America," and two young women, Misses Mary Wong and Mary Wing, raised the flags over the site. After ground had been broken with a silver spade the Chinese girls and others sprinkled pop corn over the ground to bring good luck.

The Chinese Village Pagoda and Tea Garden promises to be one of the most beautiful structures on the grounds and will cost G. \$48,000 without the furnishings, which are to represent an outlay of G. \$200,000.

In the accompanying photograph of the crowd taken from the speakers' stand a few of the Exposition attractions are shown in course of construction.

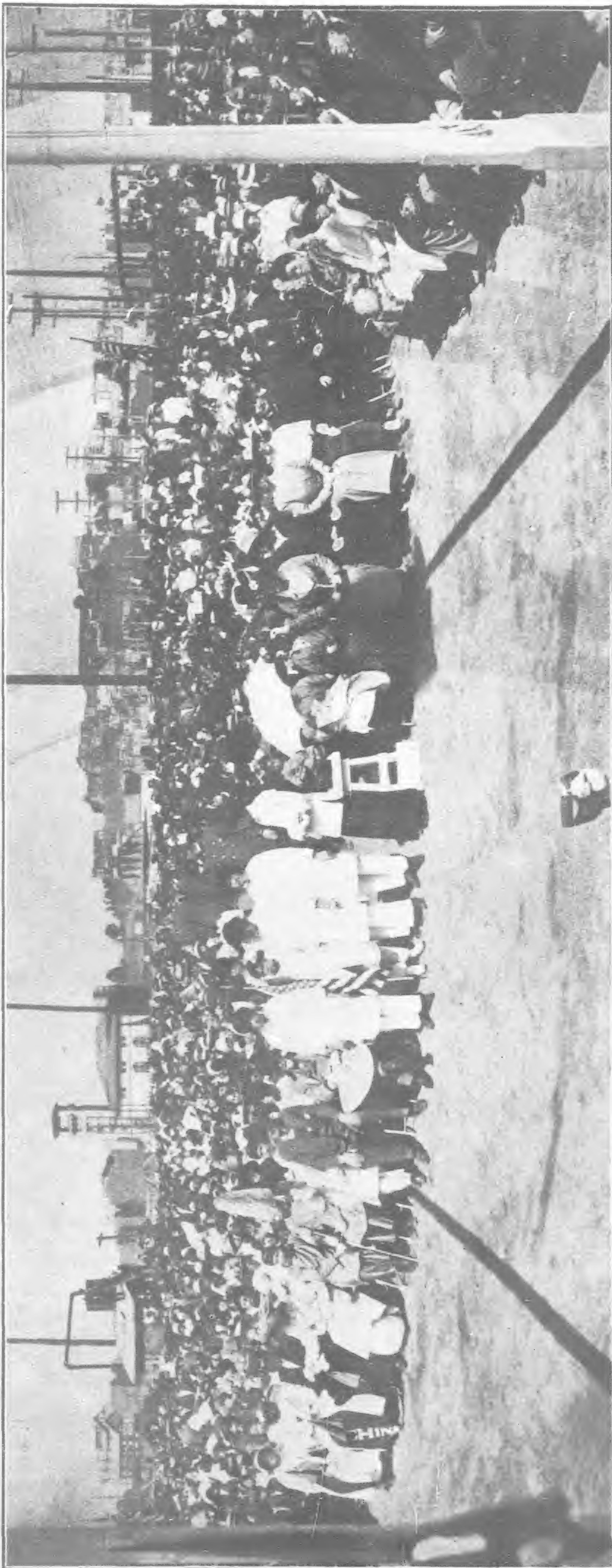
CANTON-HANKOW RAILWAY

It is reported that arrangements have been made whereby funds for the construction work of the Canton-Hankow Railway have become available. Some little difficulty was experienced as the proceeds of the loan were under the control of the original Quadruple Group and it was necessary to obtain sanction for the use of the funds from each individual member of the Group. Now that this has been obtained the work will progress as rapidly as possible under the direction of Dr. Jeme Tien-yu.

SALT INDUSTRIAL BANK

The advisability of establishing a salt industrial bank has been suggested by Mr. Chang Chen-fang, Financial Adviser to the President. It is claimed that the establishment of such a bank would lead to the more speedy collection of the salt revenue, besides assisting the salt industry in various ways.

Lieut. General Baron Satoru Nakamura has been appointed Governor-General of Kwantung in succession to Baron Yasumasa Fukushima, who was promoted to the rank of full General and placed on the reserve list at the same time.



Breaking ground for the Chinese Village Pagoda and Tea Garden at the Panama-Pacific International Exposition.

CHINESE GOVERNMENT RAILWAYS

PEKING-MUKDEN LINE

The following is the report of the Peking-Mukden Railway for the Half-Year from 1st January to 30th June 1913:—

The National Assembly having fixed the 30th June as the date on which the fiscal year of the Chinese Government will be closed in future, the accounts of this Railway have been made up to that date to comply with the order. For this reason the present report only deals with six months working from January to June and the results are compared in the following table:—

	Half year ending 30th June		
	1911	1912	1913
Earnings...	5,330,328.40	6,105,903.06	7,829,588.32
Working Expenses ...	1,846,836.41	1,983,641.02	2,088,431.35
Balance after paying Working Expenses ...	3,483,492.05	4,122,352.04	5,741,153.97

Ratio of Working Expenses to Earnings ... 35% 32½% 27%

MILEAGE.—The mileage open to traffic is 603.76 miles.

LOANS.—The next repayment of the Imperial Chinese Railways 5% Gold Loan of 1899 falls due on 1st August, 1914.

The service of the Gold Loan of the South Manchurian Railway has also been duly met.

EXCHANGE.—The monthly remittances to London in settlement of Loan service were made at the average rate of 2/10½ per Tientsin Tael.

LI TSOT-CHIEE
Managing Director,
CHU KIN-HOW
Associate Director,

STATEMENT OF ACCOUNTS

CAPITAL AUTHORISED AND CREATED

Details	Capital Authorised			Capital Created			Balance		
	Stock and Shares	Loans	Total	Stock and Shares	Loans	Total	Stock and Shares	Loans	Total
	\$	\$	\$	\$	\$	\$	\$	\$	\$
Chinese Government and Chinese Shareholders	21,994,428.57	—	21,994,428.57	21,994,428.57	—	21,994,428.57			
Under Loan Agreement 1899 £2,300,000 ...	—	27,600,000.00	27,600,000.00	—	27,600,000.00	27,600,000.00			
Under Japanese Loan Agreements, South Manchuria Rly. Loan, 1909, Gold Yen 320,000...	—	377,142.86	377,142.86	—	377,142.86	377,142.86			
	\$ 21,994,428.57	27,977,142.86	49,971,571.43	21,994,428.57	27,977,142.86	49,971,571.43			

STOCK AND SHARE CAPITAL CREATED SHOWING PROPORTION ISSUED.

	Amount Created	Amount Issued	Amount Unissued
	\$	\$	\$
Chinese Government and Chinese Shareholders ...	21,994,428.57	21,994,428.57	—
	\$ 21,994,428.57	21,994,428.57	—

amount of Loan £2,300,000).

Existing at 31st December, 1912... £ 1,840,000 22,080,000

Existing at 30th June, 1913 ... £ 1,840,000 22,080,000

Of which there was invested in the Hongkong & Shanghai Bank, London, at 31st December, 1912 £44,995.15.5 539,940.28

Withdrawals ... £44,995.15.5 539,940.28

Leaving invested in the Hongkong & Shanghai Bank, London, at 30th June 1913 ... — —

SOUTH MANCHURIA RAILWAY LOAN, 1909 (original amount of Loan G. Yen 320,000.00).

Existing at 30th June 1913... G. Yen 257,777.81

CAPITAL RAISED BY DEBENTURE STOCK

CHINESE GOVERNMENT PEKING-MUKDEN 5% RAILWAY LOAN FORMERLY CALLED IMPERIAL CHINESE 5% RAILWAY LOAN, 1899(original

RECEIPTS AND EXPENDITURE ON CAPITAL ACCOUNT

	Total to 31st Dec. 1912	Amount expended in Half Year to 30th June 1913	Total to 30th June 1913		Total to 31st Dec. 1912	During Half Year to June 30th 1913	Total to 30th June 1913
	\$	\$	\$		\$	\$	\$
TO EXPENDITURE				BY RECEIPTS			
Lines open for Traffic ...	49,635,095.65	—	49,635,095.65	Shares ...	21,994,428.57	—	21,994,428.57
Steamer...	336,475.78	—	336,475.78	Debenture Stock ...	27,600,000.00	—	27,600,000.00
	\$ 49,971,571.43	—	49,971,571.43	South Manchuria Rly. Loan	377,142.86	—	377,142.86
Balance...			Nil				
			\$ 49,971,571.43				\$ 49,971,571.43

DETAILS OF EXPENDITURE ON CAPITAL ACCOUNT.

Nil

EXPENDITURE ON CAPITAL WORKS PAID FOR FROM REVENUE

Betterments

Rolling Stock	234,278.46
Tongshan Works... ..	16,086.18
Additions to Stations	10,235.54
Staff Quarters	12,456.59
Carriage and Locomotive Sheds	32,440.90

Other Buildings	9,303.82
Standard Oil Siding	19,253.62
Other Sidings	18,238.50
Doubling track from Huang-ku-tun to Mukden Station	
S. M. R.	41,532.49
Miscellaneous	3,219.45

Expended during Current Half Year	406,045.55
Expended in Previous Years	9,358,544.55
\$	9,764,590.10

REVENUE ACCOUNT

Dr.

To Maintenance of Way, Works and Stations as per Abstract A	534,004.85
“ Locomotive, Carriage and Wagon Expenses as per Abstract B.	993,837.48
“ Traffic Expenses as per Abstract D.	274,784.84
“ General Charges “ “ E.	285,807.18
“ Balance carried to Net Revenue Account	2,088,434.35
	<u>5,741,153.97</u>
	7,829,588.32

Cr.

By Earnings	
Passengers	3,058,717.39
Goods	4,359,497.74
Miscellaneous Receipts	250,284.84
Chinese Government Traffic	152,088.35
	<u>7,829,588.32</u>

NET REVENUE ACCOUNT

Dr.

To Debenture Loan, Interest	456,760.76
Chinese Shares, Interest	13,457.15
“ S.M.R. Loan, part capital repaid	9,428.57
“ “ “ “ Interest	7,071.41
“ Paid to Chinese Government	4,497,552.73
“ Shipping Department	9,600.70
“ Tongshan College, Upkeep... ..	37,800.00
“ Bonus to Employees	197,474.04
“ Betterments, being amount taken from Revenue for Capital Works	406,045.55
“ Balance... ..	<u>6,217,609.48</u>
	\$ 11,852,800.39

Cr.

By Balance forward from last year	6,111,646.42
“ Balance transferred from Revenue Account	<u>5,741,153.97</u>
	\$ 11,852,800.39

GENERAL BALANCE SHEET

Dr.

Capital Account, Balance	Nil
Salaries and Wages due	236,137.17
Sundry Creditors	141,865.53
B. R. A. Balance taken over	3,293,197.44
Net Revenue A/c. Balance at Credit	<u>6,217,609.48</u>
	\$ 9,888,719.62

Cr.

Hongkong and Shanghai Bank, London	
Indemnity Funds... ..	£20,000
Revenue Funds, on Deposit Rect	35,000
Revenue Funds, on Current Account “ A ”	<u>31,451.15.9</u>
To meet repayment of Loan Capital	515,191.94
Cash with foreign Banks in China	
On Deposit Receipt	\$1,495,714.29
On Current Account	<u>757,975.88</u>
Cash on hand in Head Office	197,071.54
Stores	3,078,156.58
Investments	1,199,289.09
Traffic Accounts due to the Railway	640,266.76
Other Accounts due to the Railway	906,082.49
Accounts due by other Railways	<u>61,549.61</u>
	\$ 9,888,719.62

WM. HENDERSON, C.A.,

Chief Accountant.

ABSTRACTS.

A. Maintenance of Way, Works and Stations.

Half Year ending
30th June, 1912Half Year ending
30th June, 1913

80,862.30	Salaries, Office Expenses and General Superintendence	86,859.42
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MAINTENANCE AND RENEWAL OF PERMANENT WAY:—

159,257.36	Wages	170,190.43
178,303.48	Materials	<u>200,680.95</u>
337,560.84		370,871.38

REPAIRS OF BRIDGES.

9,681.63	Wages	4,358.16
15,067.87	Materials	<u>12,627.32</u>
24,149.50		16,958.48

53,758.24

REPAIRS OF STATIONS AND BUILDINGS.

59,288.57

\$ 496,330.88

\$ 534,004.85

Rails changed.

7 Old section 60 lbs. broken or defective.	
8 New section 60 lbs. " " "	
1 85 lbs. " " "	
1 Japanese 60 lbs. " " "	
1513 ft. Old section 60 lbs. track replaced by new section 60 lbs.	
Fangs of ballast used for maintenance	7,133.
Fangs of ballast used for new work	2,704.
Floor ties renewed	211.

Probable renewals for next year

(a) 8 ft. sleepers	250,000.
(b) Crossing timbers	1,975.
(c) Floor ties... ..	7,200.

New bridges Completed.

Bridge No. 52, 23 spans of 30 ft., timber piles and concrete piers, girders of old 52 bridge used again.
Fangs of rubble used for protective work 4,266.
Probable extra bridge work, etc., necessary to cope with floods:—
Re-forming and pitching bank between Yang-tsun and Chang-chuang.
Sui-chung-hsien, Extension of No. 188 bridge.
Strengthening Liu Ho dams.

Earthwork executed.

(a) for repairs	26,037 fangs.
(b) for new work	12,398 "

Platforms extended.

Lanchou Loading Stage	35 ft.
Shanhaikuan Up platform	186 "
" Down "	135 "

New buildings erected.

Fengtai Stone's light store	272	sq. ft.
" Train Caterer's quarters	784	"
Tientsin Watchman's house	221	"
" Coal coolies house... ..	300	"
" Tank house... ..	57	"
Tongshan Addition to Works Manager's house	137	"
Shanhaikuan Traffic Inspector's servant quarters	815.10	"
" New lamp room	105	"
" Conductor's quarters extension	202.32	"
" Westinghouse brake shop	285	"
Sui-chung-hsien New pump runners quarters	384	"
Ning-yuan-chou Guard and Brakemen's quarters	140.86	"
Chinchou New axle fitters' shop	120	"
" New lamp room	144	"
" Loco. yard watchmen's house	177.50	"
Kou-pang-tze New telegraph quarters... ..	1,030	"
Ching-tui-tzu New house for station master... ..	300	"
Chu-liu-ho New telegraph quarters	425	"
Huang-ku-tun Locomotive store	453	"
" Office on Transfer platform	679	"
" Platelayers' cabin No. 56 A	551	"
" Caterer's quarters	819	"
" Additional Engineer's quarters	364	"

Total 9,914.78 sq. ft.

Turntables put in. One 55 ft. at Tientsin, the one in use of same size being taken out and put in at Fengtai where the old one required a thorough overhaul.

Heavy works executed.

Yang-tsun to Chang-chuang. All bridges spurs have been rebuilt and neat pitched to stop of 2 or $2\frac{1}{2}$ to 1: about two miles of bank slope re-formed $2\frac{1}{2}$ to 1 and rough pitched and another $1\frac{1}{2}$ miles of low bank re-formed 2 to 1 and neat pitched.
Chang-chuang to Lofa. Four and a half miles of track has been raised so as to have rail level at least 2 ft. above 1912 flood level.
Alterations to station buildings and waiting shed at Chinchou.
Changing 2.42 miles track at Kao-chiao from old section 60 lb. to new section 60 lb.
New landing at Newchwang for ferry boat.
No. 52 Bridge, 23 spans of 30 ft.
Repairs to Liu Ho dams.
Permanent siding of 2.57 miles laid between Huang-ku-tun and Mukden (South Manchuria Railway) Stations.

Foreshore protection.

66 fangs of rubble used at Yingkou.

Wharfage.

Small junk wharf, 100 ft. \times 5 ft. built at Chu-liu-ho.

Painting executed for maintenance.

57 Bridges painted.
Chien-men extra tank.
Sui-chung-hsien tank.
Kou-pang-tzu tank.
Tientsin station buildings and signal cabins.
Tongku signals interlocking gear and pointstands.
11 staff quarters at Tientsin and Tongshan.

On Inside Wall District weights on all pointstands have been painted half white and half red to act as point indicators: all lamp cases on station platforms have had the names of stations painted on them.
On Outside Wall District all platform lamps, station benches, whistle posts, signals, staff quarters and station buildings have been painted.

Water supply Works.

Hsu-ko-chuang. A new well 22 ft. deep and 10 ft. diam. has been sunk giving 16 ft. of water. 115 ft. of 4" pipe laid from it to pump.
Tientsin. A small 1850 gall. tank has been erected at East end of station and connected to City mains by 185 ft. of 3" pipe.
Chien-men. An extra tank 10 ft. dia. \times 8 ft. has been erected. It was removed from Tungchou River where it was not required.
Sui-chung-hsien Hand pump has been replaced by steam pump and boiler.
Li-chia-wu-pu. A new tank 15 ft. \times 15 ft. has been erected.

Works in progress.

Fengtai station building coolies quarters.
Wan-chuang Station building.
Tientsin Central Tsinpu quarters and workshop.
Tientsin East Station building extension.
" " " Metalling roads.
" " " Goods yard road.
" " " Standard Oil Co's Siding.
" " " New sidings east end of station.
Tongshan water supply work.
" New boiler house chimney.
" Extension of pattern shop.
" new shunting siding and alteration to Grid.
Kuyeh new sidings.
Lei-chuang U.S. Military barracks.
Liu-shou-ying Pig stage and siding.
Tongho waiting shed.
Baggage rooms at Tongho, Pei-tai-ho, Changli, Lanchou, and Tongshan.
Shanhaikuan Hospital.
" Bridge works girder shop.
" Shih-ho tank.
Chinchou Loco. Inspector's quarters and Loco. men quarters.
" Boiler house.
Nu-erh-ho New quarters for station master.
Koupangtzu and Yinkou baggage rooms.
Li-chia-wo-pu tank.
Jao-yang-ho Police barracks.
Mukden temporary station baggage room.
Huang-ku-tun Additional room to Traffic Inspector's quarters

Accidents during the six months.

Employees killed	6.	Injured.	7.
Passengers "	4.	"	6.
Trespassers "	24.	"	5.
Animals killed	2.		
Engine and car derailments... ..			11.
Collisions while shunting in station yards			4.
Train separated			1.
Train or cars on fire			6.
Bridge deck			1.
Minor accidents			22.

Rainfall and floods.

No floods during the six months.
General rainfall averaged $8\frac{1}{2}$ inches.

Average Number of Employees, 4,808.

BRIDGE WORKS, SHANHAIKUAN.

The tonnage of work turned out was as follows:—

Girders.

13 spans 30 ft. clear girders	Tons 106. 18. 3. 20.
3 spans $3\frac{3}{4}$ ' \times 9" \times 13' 8" Joist girders	2. 2. 3. 8.
	Tons 109. 1. 3. 0.

Special Work, tank, etc.

1 7' 6" diam. \times 7' 10" Water tank	1. 12. 0. 10.
11 sets Smoke jacks	6. 1. 0. 20.
4 12' \times 36' 0" \times $\frac{1}{8}$ " steel plate chimneys for Koupangtzu workshop	1. 7. 0. 0.
	Tons 10. 0. 1. 2.

Miscellaneous iron work.

To the extent of	Tons 34. 5. 0. 0
Total Tonnage of ironwork done	Tons 153. 7. 0. 2.

Points, Crossings, etc.

During the six months 84 complete sets of Points and Crossings were manufactured and delivered, and 202 sets double and single armed signal posts, fittings, ladders and tripods constructed.

AMERICAN TRADE IN CHINA

AN ANALYSIS OF THE SITUATION

The American Minister at Peking, Dr. Paul S. Reinsch, has prepared the following important study on American Handicaps in reaching Chinese Trade:—

In connection with the efforts made by such organizations as the Chamber of Commerce of the United States of America, the American Manufacturers' Association, the Pan American Society and the American Exporters' Convention, which latter was addressed by the President of the United States on May 29, the following considerations upon the organization of American trade and investment abroad, particularly in China, are submitted:

The greatest deficiencies which prevent the development of American commerce and enterprise in China are the absence of financial institutions for handling foreign loans; the lack of an investment company which could subject proposed improvements to scrutiny and gather up the means for promoting sound enterprises; the lack of American commission houses; the lack of an organization of exporters with representation in important foreign markets, like China; and finally the lack of commercial attachés, who could assist the diplomatic missions and consular offices in co-ordinating and rendering more efficient the work now performed by these agencies.

HOW THE BANKING QUESTION MIGHT BE SOLVED

As individual banks in the United States, or for that matter in almost every country, are not so organized that they could readily engage in foreign business, and, as the scope of foreign business, especially to countries where new markets have to be gained, is such that it transcends the means of individual banks and their opportunities for placing investments, it becomes necessary that there should be formed a financial institution or institutions broadly representative of American financial activities which could undertake the development of American financial and industrial interests abroad. In the announcement of the withdrawal of the United States from the Six-power Group in China, the President declared:

The Government of the United States is earnestly desirous of promoting the most extended and intimate trade relationship between this country and the Chinese Republic. The present administration will urge and support the legislative measures necessary to give American merchants, manufacturers, contractors, and engineers the banking and other financial facilities which they now lack and without which they are at a serious disadvantage as compared with their industrial and commercial rivals. This is its duty. This is the main material interest of its citizens in the development of China. Our interests are those of the "open door"—a door of friendship and mutual advantage.

In order that the American Government may give such support to financial institutions coming abroad as is given by other governments, it is desirable that these institutions should have the broadest possible—in fact, a quasipublic—character, and that they should be broadly representative of the financial energies of the Nation. If banking institutions for foreign commerce could take a form similar to that of the Federal reserve banks, created by the currency law, their representative character would be assured. At any rate, it is desirable that, for purposes of foreign trade, it should be made legal for financial institutions in the United States to unite in the creation of a banking institution which could perform for the country this service connected with foreign investment, which, under modern conditions, is necessary in order to prepare the way for the enlargement of our foreign commerce.

INVESTMENTS OF CAPITAL

As the United States is entering a stage of development in which it not only will need a much larger foreign commerce, but in which there will also be available larger amounts of capital for investment abroad, it is highly important that responsible investment companies should be created in order to avoid loss and

waste and to secure the greatest returns from this expenditure of national wealth. Even in the past there have been great amounts of money available for foreign investment; millions of dollars were gathered together to be spent in such enterprises as Mexican rubber plantations, which were in many cases unsound. This shows that the American public is not adverse to foreign investment. It also shows that they are easily misled into enterprises of doubtful solidity to the great embarrassment of people who frequently can not afford the losses. It is therefore of the highest importance, from every point of view, that responsible companies for foreign enterprises should be created. It would be their business to investigate the many opportunities which are now open to foreign enterprise in such countries as China, to select the most sound and practical investments, and to conduct the available capital into the proper channels. This activity would have a highly stimulating effect on American foreign commerce. Commerce no longer develops alone, but is so closely bound up with investment that the two must be constantly associated. Under modern conditions, commerce follows investment.

AMERICAN COMMISSION HOUSES IN CHINA

The advances which have hitherto been made by American commerce are due mostly to so great an inherent excellency of the products that a demand was created abroad in spite of all absence of export organizations; but American commerce can not continue to rely on foreign commission houses, which will always give it only a secondary position. The creation of more American commission houses in China is essential if there is to be any advance of American commerce here; only by creating its own organs of distribution can our manufacturing industry hold its own in a market like China.

A COMBINATION SALES ASSOCIATION

Organizations of export interests have been created by many of the other nations, especially Great Britain and Germany, and they have been successful in extending their commerce through the consequent co-operation among exporters. Such is, for instance, the Representation for British Manufacturers (Ltd.), a company composed of such important manufacturing firms as Cravens (Ltd.), Dorman, Long & Co. (Ltd.), Thos. Firth & Sons (Ltd.), Sir William Arrol & Co. (Ltd.), etc.

This company is not a trading concern; its sole object is to establish and maintain staff representatives in certain foreign countries for the sale of manufactures. It thus combines the features of an agency or propaganda and of a selling organization. The Export Verbund of Germany is also making an organized effort of trade propaganda.

It would seem very desirable that some such organization as those mentioned in the first part of this dispatch should organize in an important country like China an agency of representation for discovering and investigating trade opportunities and guiding manufacturers at home in their competition with foreign enterprise.

VALUE OF COMMERCIAL ATTACHES

Great efforts are being made to have the development of American commerce effectively assisted through the action of diplomatic and consular representatives; but an organization has not as yet been effected through which the work of these agencies could be co-ordinated so as to be brought to bear most effectively on specific problems. It is, from every point of view, essential to the advancement of American commerce that the embassies and legations in countries which are important to our commerce should be provided with commercial attachés. The assistance which such officials could give in unifying the efforts of the consular representatives, and in making them valuable for the best guidance of our commerce and manufacturers interested in foreign commerce, would add greatly to the efficiency of the whole service.

FAR EASTERN RAILWAYS

CHINA

Canton-Hankow Line.—A consular report, reviewing progress in 1913, says:—A further section of the Canton-Hankow line was opened to traffic on August 1 as far as Sha Hou, 109 miles from the Canton terminus. The next section, of which 20 miles are practically completed, and will shortly be opened to traffic, is estimated to cost \$2,000,000, and will take the line to Hsiukuan (Shao Chou). It is not proposed to continue beyond this point until the Hunan section is more advanced towards completion, as the country is sparsely inhabited between Hsiukuan and the Hunan border. Since the opening of the line to Ying Tak receipts are said to have almost doubled themselves, and there is no doubt that they could be still further increased at the present time but for the shortage of freight cars. As mentioned above, traffic on the North River has been practically at a standstill, and junks have often taken more than a fortnight to cover the distance between Hsiukuan and Canton. The result has been a heavier goods traffic than the railway can cope with. A third call of \$2.50 a share was made during the latter half of the year, but the company found great difficulty in collecting the money until they threatened to confiscate shares on which calls had not been fully paid up. Since then about 60 per cent. has come in, and hopes are entertained of collecting the remainder. Lack of capital is given as the reason for not commencing the loop line to link up the Canton-Hankow and Canton-Kowloon railways. This line would undoubtedly benefit both railways, and it seems a shortsighted policy to delay its construction, which is estimated to cost \$350,000 to \$400,000.

Work has not been commenced on the Canton-Macao line, the delay in this case being also ascribed to lack of capital.

Shanghai-Nanking Railway.—The following figures of traffic returns (approximately) for the week ended August 29, are issued by the Shanghai-Nanking Railway:—

Year.	Passen- gers.	Goods & Sundries.	Total for the week.
	\$	\$	\$
1914....	47,712	8,461	56,173
1913....	29,008	6,424	35,432
Increase.	18,704	2,037	20,741
Decrease	—	—	—

For nine weeks.

Year.	Passen- gers.	Goods & Sundries.	Total
	\$	\$	\$
1914...	374,729	99,631	474,360
1913....	296,808	65,760	362,572
Increase.	77,921	33,872	111,788
Decrease	—	—	—

Week ended September 5.

Year.	Passen- gers.	Goods & Sundries.	Total for the week.
	\$	\$	\$
1914....	47,762	8,642	56,404
1913....	32,954	6,037	39,891
Increase.	14,808	1,705	16,513
Decrease	—	—	—

For 10 weeks.

Year.	Passen- gers.	Goods & Sundries.	Total.
	\$	\$	\$
1914....	422,491	108,273	530,764
1913....	329,757	72,706	402,463
Increase.	92,734	35,567	128,301
Decrease	—	—	—

Week ended September 12.

Year.	Passen- gers.	Goods & Sundries	Total for the week.
	\$	\$	\$
1914....	42,203	7,289	49,492
1913....	58,322	6,764	65,026
Increase.	—	525	—
Decrease	16,119	—	15,534

For 11 weeks.

Year.	Passen- gers.	Goods & Sundries	Total
	\$	\$	\$
1914....	464,694	115,562	580,256
1913....	388,079	79,410	467,489
Increase.	76,615	36,152	112,767
Decrease	—	—	—

THE PHILIPPINES

Manila Railway Co.—The seventh ordinary annual general meeting of shareholders in the Manila Railway Company (1906), Ltd., was held at Winchester House, Old Broad-street, London, on July 30. Mr. C. J. Cater Scott (chairman of the company) presiding. The Secretary (Mr. J. Mackenzie) read the notice convening the meeting and also the report of the auditors.

The Chairman, in moving the adoption of the report, said that he must admit at once that the results, as stated in the report presented that day, were not so satisfactory as those who had followed the fortunes of the Manila Railway might have expected. So far as the gross earnings were concerned, there was really nothing to complain of, but when they came to the net result it would be found that, first of all, there had been a general increase in working expenditure—which he took to be the experience of nearly every other company throughout the world—thus showing a reduction in net earnings. Then, again, they had to bear a certain amount of increased burden representing interest on capital employed on the Southern lines, lines which had to a certain extent been completed and bonded, but these lines were in a more or less incomplete state. The third item to which he had to refer was the large amount of income tax. Those three items had very largely reduced the accounts of the English Manila Railway Company in the way of net receipts. It was only fair to add that every railway company carrying out a very large scheme of construction necessarily involved the locking-up from time to time of a large amount of capital, and, while the expenditure of this capital was not fully remunerative, it had earned its full interest charges, and the directors were able to pay a small dividend on the preference shares, and, at the same time, increase the amount of the carry forward. Under these circumstances he thought they must all admit that the railway had not done badly. With regard to working expenses on the Northern line, taking the years 1904 to 1911, inclusive, it would be found there had not been a great deal of variation in the working expense ratio, which had been about 43 per cent. to about 44 per cent., except in the year 1908, when they were 45.64 per cent.; but in 1912 there was a considerable increase, for in that year it reached 46.37 per cent., and in 1913 they were 47.28 per cent., which was an increase of nearly 1 per cent. over the expenses of the previous year. As to the Southern lines, in the last three years there had been very steady and large increases in the working expenses, as well as in the receipts, which he confessed he was not altogether prepared for, but there were certain matters to which he would refer, showing how this expenditure had arisen. First of all, the Northern lines were 20 years

old, and in 10 years their goods traffic had grown from 146,000 to 695,000 tons. That was on the Northern lines alone, and their passenger traffic had grown from 1,335,000 to 6,335,000. In order to deal efficiently with these goods and passenger traffic it had been necessary to strengthen their bridges and other works in order to carry the heavier locomotives which were required. Then there was another matter on the Southern lines which had led to the increase in the working expenses. The mileage on those lines was developing very rapidly. Perhaps the shareholders hardly realised what this development meant. For instance, in 1910 they had 70 miles in operation, in 1911 103 miles, in 1912 154 miles, in 1913 174 miles, and by the end of this year they expected to have 254 miles, so that in the five years they would have risen from 70 miles to 254 miles of track in operation. When they had more miles to operate it necessarily required an increased staff. Then there was another difficulty they had to contend with. They were the only railway in the island of Luzon, and from the day when they turned the first turf of the line, some 20 years ago, they had had to train practically every member of the staff out of the raw material which was at their disposal. There was really no reserve of skilled labour in the island. They had, therefore, to educate everybody, and he considered that it was greatly to the credit of Mr. Higgins that he had been able to surround himself with such an excellent staff produced from such raw material.

The policy of the board was not to run "Flying Dutchmen," or anything of that sort, but to maintain the road in good working order, and to conduct the business efficiently. The company really required something useful in the way of a railway, and desired that it should be kept in good working order. (Hear, hear.) It would be noticed from the report of the American company that a sugar mill was being erected at Calamba, and that there were other smaller sugar mills to be erected elsewhere, and all that could be said was that they wished them every possible success, as it would undoubtedly lead to the improvement of the traffic of the railway. A short branch of four or five miles would have to be constructed to these mills, which would be capable of producing something like 20,000 tons of sugar, and, if the cane was there, and given good seasons, there was no doubt it would be, and there was no doubt those mills would be prosperous. Then, again, he ought to add that as they pressed forward to the southern portion of the island they would be able to tap the districts which produced hemp and copra, and he believed that when they got into those districts they would secure a valuable traffic in both those commodities. The task of construction during the last few years had been somewhat heavy and anxious. In 1908 they had 208 miles in operation, in 1913 470 miles, being an increase of 271 miles, and by the end of the present year they expected to have 550 miles in operation, and in the middle of 1916 610 miles, leaving, after, that date, only 110 miles to finish the programme of construction.

When they were building all this mileage, of course, it had to be paid for, and the only way it had been paid for was by issuing bonds from time to time. It had not been a favourable time for issuing these bonds, and they either had to issue them at a higher rate of interest or accept a lower price for them. In any case the company in such circumstances, would be, and were, heavily hit. The directors in 1910 foresaw this trouble, though he was sorry to say not to its fullest extent. At that time, the Northern section was practically completed, and the first charge of the "A's" and "B's" earned last year £208,000, as against interest amounting to only £155,200. The Southern section was financed by 4 per cent. guaranteed bonds, which were guaranteed by the Philippine Government under

an Act passed by Congress at Washington, and when the company agreed to build the line on those guaranteed bonds they did not anticipate that there would be any difficulty in selling them, but in this respect they had been disappointed, owing to the fall in prices. These bonds had failed to realise the cost of construction, and the deficiency would have to be made good out of the proceeds from the "A" and "B" bonds, which was a second charge on the Southern section. Therefore, the board proposed to modify their scheme, and to do that the assent of the authorities would have to be asked. The Chairman then proceeded by means of the map to explain the proposed modification. Next, he proceeded to deal with the accounts of the English company, and explained that they had received the full amount of interest on bonds held in the American company. There was a balance available for dividend of £123,940, and the board recommended a dividend at the rate of 1 per cent. on the preference stock, and to carry forward £103,940 to the next account. He concluded by moving the adoption of the report and accounts.

Mr. R. G. Phillpotts seconded the motion.

In reply to questions the Chairman said that the modified programme of construction should be completed about the spring of 1916, leaving the remaining 110 miles to be finished at a later time. A certain amount of money had already been spent in the South, and they thought it worth while to complete the construction of the line there in order to secure the guaranteed bonds. Moreover, they believed that the line, even though separated from the rest of the system, would fully pay for itself. With reference to the provision of funds, they had a certain amount in hand in the way of stocks, but they would have to make an issue of bonds for construction purposes. The Chairman did not think it was desirable to distribute among the shareholders any of the balance of £103,000. In the difficult times through which they were passing it was much wiser to retain it. He was now discussing a scheme for the allocation of a certain portion of that balance to open a proper renewal fund, which would be a very useful thing. The resolution was then put to the meeting and unanimously adopted.

On the motion of the Chairman, seconded by Admiral Sir Cyprian A. G. Bridge, G.C.B., a dividend of 1 per cent. on the preference stock for the year payable on July 31 was declared.

The retiring directors, Mr. R. B. Phillpotts and Mr. E. J. W. Byrne, and the auditors, Messrs. Deloitte Plender Griffiths and Co., were re-elected, and a vote of thanks to the chairman and directors and to the staff at home and in the Philippines concluded the proceedings.

MANCHURIA

South Manchuria Railway.—The returns for the month of August yielded the daily average of ¥38,074, being a decrease by ¥3,379 from the corresponding month of last year.

FINANCIAL

Hongkong and Shanghai Banking Corporation.—The ordinary half-yearly meeting, followed by an extraordinary meeting of shareholders, was held at Hongkong at noon on August 22. The Hon. Mr. D. Landale (Chairman of Directors) presided.

The CHAIRMAN said:—I think you will agree that the accounts disclose a satisfactory state of affairs. We propose, subject to your approval, to make the following distributions of the profits:—

Dividend £2 3/- per share subject to income tax.

\$350,000 added to silver reserve.

\$100,000 written off Bank premises account.

After providing for this, there remains a profit of \$2,089,008.44 to be carried forward, being about \$20,000 more than the amount brought in from the last account. (Applause.) With regard to the dividend, your directors decided that it was desirable to follow what has now become the prevailing practice, and to declare the dividend subject to the deduction of income tax instead of free of income tax as formerly. After careful consideration, we are recommending an increased dividend, and in making this change we considered it desirable to increase the dividend by an amount approximately equivalent to the income tax levied at present and, should circumstances permit, to do the same at the end of the current year. I trust, gentlemen, that this procedure will meet with your approval and that you will also approve of the other appropriations which we recommend. (Applause.) Three weeks ago I hoped to address you with regard to the balance sheet, and to the prospects of business in China generally in an optimistic frame of mind.

The figures of the balance sheet show a healthy expansion in every direction, and the total of our assets and liabilities is the highest recorded in the history of the Bank. (Applause.) Our gold securities, taken at the market values ruling at the end of the half-year, showed a very handsome surplus over the values at which they are standing in our books. The outlook for China was full of promise, the Central Government steadily introducing order and authority throughout the provinces, the Maritime Customs revenue collections for the present year being the highest on record, and the collections of the salt inspectorate under the able direction of Sir Richard Dane exceeding the most sanguine expectations. Everything pointed to prosperous times ahead, but the tremendous events now happening in Europe have upset commerce all over the world.

It is useless at this juncture to speculate as to how the nations will emerge from this terrific struggle, and what the effect of it will be on the conditions in China and the other countries in whose trade we are interested; but one certain result will be widespread disorganisation and distress. With our far-reaching interests we can hardly hope to escape without some loss. Thanks, however, to the policy of strengthening the reserves which has been steadily pursued for many years by the directors, with the consent and approval of the shareholders, the Bank is in a very commanding position, and able to face with equanimity any situation which may reasonably be anticipated as the result of the appalling war now going on. (Applause.) It will be seen from the balance sheet that the cash position of the Bank at the end of the half-year was unusually strong. We have accordingly been able to meet freely any unusual demands which our constituents have been obliged to make on us as a result of the dislocation of business, and it will be the policy of the Bank to assist the public by continuing to give facilities on the ordinary terms with the object of minimising the disturbance to trade as far as possible. (Applause.) Here, as in other Eastern ports, there has been some excitement among Chinese caused by absurd rumours spread by interested parties, and many poor people have fled from the Colony. It cannot be too strongly impressed on the Chinese generally that their persons and property are perfectly safe here, and that apart from the interruption to overseas trade, business will proceed as usual. Let us hope that the more influential members of the Chinese community will use every exertion to bring an end to this condition of unrest and uneasiness. (Applause.) Mr. Stabb, our Chief Manager, left last May on a hard-earned holiday, but immediately upon the European position becoming critical he at once offered to curtail his leave and will probably return some months earlier than was originally intended in order that the chief officers of the Bank may all be at their posts to cope with any difficulties that may arise under the exceptional circumstances which now exist. It has no doubt been of assistance to the London management to have Mr. Stabb in London during the past few

weeks. I would like to take this opportunity of saying, gentlemen, that your directors have every confidence in Mr. Stephen, your Acting Chief Manager, and you may rest assured that every care is being taken to safeguard the interests of the Bank. (Applause.) As mentioned in the report, your directors have had to regret the death of their colleague, Mr. Friesland, who joined the board in 1908, and who took a keen interest in the affairs of the Bank. We had in him a zealous and loyal colleague and we deplore his untimely death. The provisional Committee which met in August, 1864, to discuss and arrange the formation of the Bank contained a German member, and since then the board of directors has never been without one or more German representatives. For reasons which will be apparent to you, and which I need not enlarge on, our German colleagues have resigned their seats. The directors wish to record their personal regrets at the withdrawal of those gentlemen, with whom they have always worked in perfect harmony. Before moving the adoption of the report and accounts as presented, I shall be pleased to answer any questions you may put to the chair.

There were no questions, whereupon,

The CHAIRMAN proposed the adoption of the Report and Statement of Accounts, as presented.

Hon. Mr. H. E. POLLOCK seconded, and said:—I have great pleasure in seconding the adoption of the Report and Statement of Accounts, which are of a most satisfactory character. During the past few weeks trade conditions have been seriously disturbed by the war, but it is my firm belief that we shall shortly witness a marked improvement in these conditions in this part of the world, and that the strong financial position of this Bank, with its large reserve funds, enables the shareholders to look forward to the future with calmness and confidence. (Applause.)

The motion was then put to the meeting and carried unanimously.

The appointment of Mr. G. T. M. Eddins as Director was confirmed.

At an extraordinary meeting held later the Directors were authorized to seek sanction from the Government for the amendment of the Ordinance which governs the constitution of the Corporation, and to ask that the Corporation should be empowered generally to take security without restriction from its constituents by way of mortgage of leasehold lands in Hongkong, or of lands in other places, as security for general banking facilities, and also to hold meetings once a year instead of twice annually.

Yokohama Specie Bank.—The following is the gist of the speech delivered by Mr. J. Inouye, president of the Yokohama Specie Bank at the general meeting of its shareholders on September 10: Gentlemen, in submitting to you, shareholders of the Yokohama Specie Bank, a general report on the business transacted during the first half-year at this sixty-ninth general meeting of the bank, I have the honor to make a general statement on the economic status at home and abroad as well as on the existing condition of our bank business.

The general condition prevailing in our economic world during the first six months of this year is as follows. In consequence of a fall in the price of rice the purchasing power of the farmers had decreased; which in turn deterred enterprises, dispirited the stock market, and depressed commerce. Goods accumulated in warehouses and the cry of "hard times" was heard both in town and country. As a result of this, however, foreign imports had remarkably decreased, and exports showed signs of increasing. And this made us hope the time had arrived in which we could realize our long-cherished but long-unfulfilled desire of equalizing our exports and imports. Thus we were led to believe the present adverse state of affairs would be a cause for future prosperity in store for us, so that we

need entertain no pessimistic theory as to the present state.

The condition of the money market during the six months under review is as follows. Owing to the temporary ease prevailing during the previous term added to the general depression in the economic world referred to, the demand for funds had much diminished. Besides the flotation of short-term foreign bills to the amount of yen 25,000,000 and the reimbursement of Exchequer bonds made the monetary market somewhat slack; in consequence of which the interest-rates were lowered. But we also experienced the suspension of payment by several small banks in various places, and in Osaka a certain influential bank was placed in a state needing financial assistance. Consequently some uneasiness was experienced in monetary circles in touch with those banks. Though no serious effects had ensued, there was much precaution, so that many a bank had to suffer between deposits of high interest and scarcity of applications for loans. Thus in April or thereabouts when there was much demand of funds for the importation of raw-cotton and for the purchase of summer-goods, money had gradually become tight and the interest showed an upward tendency. But this was a sectional phenomenon, while upon the whole the money-market had kept up a state of slackness and the critical time of making half-yearly accounts was passed in peace.

As regards our foreign trade it had been in an increasingly favorable state. The exports effected during the term under review represent 312 million yen, against imports of 382 million yen showing an excess of 70 million of imports over exports. But when contrasted to the excess of imports during the corresponding time last year the figures show a decrease of 50 million yen. In imports the figures this year show a decrease of 22 million yen and in exports an increase of 27 million yen. The decrease of imports was doubtless due in great measure to such causes as curtailment of governmental enterprises and general depression at home; while the increase of exports was caused largely by the development effected in our productive enterprises. But the main cause of this satisfactory trade condition was that the marked development in our spinning industry had increased our exports of cotton yarn and cotton cloth to China, and that there was a great fashion abroad for silks which had maintained high quotations.

As regards the foreign exchanges handled by this bank they also showed a corresponding increase in respect to the exports and a corresponding decrease in respect to imports.

As regards the economic conditions in European countries the expectation generally entertained that the end of the Balkan embroglio last autumn would cure the debilitated commerce and industry, was not realized. There was no expected recovery even this year. The demand for funds continued to be small, and the monetary markets everywhere were slack. Consequently the Bank of England lowered its interest from 5 per cent. to 4½ per cent. on January 8. During the same month the bank decreased the interest twice, and cut it down to 3 per cent. The German and French national banks and others promptly followed the example of England, with the consequence that the discount rate had fallen in a corresponding degree. And yet the industry and commerce of the various countries had continued to be in an inactive state up till the close of the term under review.

In the United States though tariff and currency reforms had been effected, the people had not quite accustomed themselves to the new order of economic affairs brought about by the U. S. Government. Besides as the law pertaining to control of 'trusts' had not been codified, many an enterprise was postponed. Consequently commerce was not brisk, and there was little demand for funds. But owing to the sudden outbreak of Mexican troubles in April money became somewhat tight the stock-market in particular being much affected. But as the Mexican situation had been before

long peacefully settled, the monetary market had again relapsed into the former inactivity. Owing to this abundance of money the payment of American gold to Paris to the amount of 82 million dollars had left no ill effect upon the U. S. money market. Thus did the term under review close for the United States.

As regards conditions in the Orient, India had not quite recovered from the effects of the panic of last autumn, but owing to the brisk demand for raw cotton, the monetary circulation among the natives was in a satisfactory state. In regard to imports, however, the effects of last year's panic were still tangible. The sale of Manchester goods was not good.

In China the bad crops experienced in Tientsin last year affected the exports during the term under review. The exportation of 50,000 bales of raw cotton which was effected during the previous term was cut down to 10,000 during the term under review. The imports were also unsatisfactory. The Chinese banks were mostly hard up for funds, and owing to the general decline of credit on the part of Chinese merchants, commerce was exceedingly dull. The after-effects of the Hankow disturbances were not wholly removed.

Owing to the fall in bank-rates both at home and abroad, and to the general trade depression I have briefly described, we have experienced a certain amount of inconvenience in the business at our bank. But thanks to the satisfactory condition of our export business, which occasioned proportionate increase of the foreign exchanges handled by the bank we are enabled to report better results for the term under review than those for the previous term. The net profit for the half-year review is yen 3,495,406.24 including the amount brought forward from last term i.e., yen 1,267,488.68.

In conclusion I have to report to you that our branch office at Chientao established in November last has unavoidably been closed for the time being owing to the present situation.

SHIPBUILDING, ETC.

Shanghai Dock and Engineering Co., Ltd.

—On September 7 the U. S. Collier No. 1, was successfully launched from the Pootung shipyard of the Shanghai Dock and Engineering Co., Ltd., the christening ceremony being performed by Miss Cole. Mr. John Prentice, Chairman of the Board of Directors of the Dock Company, mentioned that the collier was the largest vessel ever built in Shanghai, and her launching weight alone was 2,300 tons. The Company had already built for the U. S. Government over thirty boats.

The collier is intended for service in Manila, and measures 362 ft. in length, with a moulded breadth of 50 ft. and moulded depth of 28 ft. She has a coal cargo capacity of 6,000 tons, and is fitted with special machinery for handling same. The coaling machinery, which is of the Holland-Johnson design, consists of four elevators, each complete with separate steam engine, coal shoots and automatic weighing machine, and each is capable of bunkering about 150 tons of coal per hour. There is also one independent coal conveyor, arranged with swivel discharge shoot and buckets driven by steam engine, so that coal can be delivered on the decks of steamers lying at a height of 50 ft. above the 20 ft. loadline of the collier.

The ship is fitted with two electric generating sets, driven by steam turbines, each capable of fully lighting the vessel; four powerful steam capstans for the handling of vessels coming alongside; powerful steam windlass steering gear; independent steam-driven air and circulating pumps; two independent Weir's vertical steam feed pumps; independent bilge and ballast pumps; and powerful fire pump. The propelling machinery consists of one set of compound surface condensing engines, with steam generating in a large cylindrical multitubular boiler.

Accommodation for the captain, officers and engineers is arranged aft, under the poop deck, with the usual galley and store rooms, and suitable accommodation for the crew is fitted forward, under the upper deck.

After being launched, the collier was towed to the New Dock to have her boiler installed.

TRAMWAYS

Shanghai Tramways.—The following is the traffic return of the Shanghai Tramways (Foreign Settlement) for the month of August, 1914, and for eight months ended August 31, 1914, with figures for the corresponding periods last year:—

	August, 1914.	August, 1913.
	\$	\$
Gross receipts	113,581.47	107,910.07
Loss by currency depreciation	28,004.16	24,680.08
Effective receipts	85,577.31	83,229.99
Percentage of loss by currency depreciation	26.24	23.00
Car miles run	312,400	202,613
Passengers carried	5,041,451	4,404,056
	eight months ended Aug. 31, 1914.	eight months ended Aug. 31, 1913.
	\$	\$
Gross receipts	863,583.28	759,049.83
Loss by currency depreciation	203,284.12	165,734.07
Effective receipts	660,299.16	593,314.86
Percentage of loss by currency depreciation	24.00	23.00
Car miles run	2,228,201	1,881,732
Passengers carried	36,523,676	30,301,293

Week ended September 2.

	1914.	1913.
	\$	\$
Gross receipts	25,115.23	24,952.93
Loss by currency depreciation	6,193.05	5,697.03
Effective receipts	18,921.28	19,255.90
Percentage of loss by currency depreciation	26.35	23.93
Passengers carried	1,125,368	1,029,204
Car miles run	66,479	58,731

Week ended September 9.

	1914.	1913.
	\$	\$
Gross receipts	24,979.92	23,973.87
Loss by currency depreciation	6,231.60	5,465.33
Effective receipts	18,748.32	18,508.54
Percentage of loss by currency depreciation	26.65	23.00
Passengers carried	1,122,443	993,423
Car miles run	63,548	56,251

Week ended September 16.

	1914.	1913.
	\$	\$
Gross receipts	23,390.86	24,886.50
Loss by currency depreciation	5,805.45	5,630.73
Effective receipts	17,585.41	19,255.77
Percentage of loss by currency depreciation	26.67	23.78
Passengers carried	1,040,943	1,043,245
Car miles run	59,071	56,833

COMPANIES

Hokkaido Gas Co.—The Hokkaido Gas Company has adopted the following profit and loss account:—

	Yen.
Net gains for the term	51,235.20
Brought over from last account	2,359.85
Total	53,595.14

To be distributed:—

Legal reserve	2,565.00
Secondary reserve	3,600.00
Bonuses and social expenses	3,000.00
Dividend at 7 per cent. per annum..	42,000.00
Carried forward to next account ..	2,430.14

Oji Paper Mill Co.—The profit and loss account for the last half year was as follows:

Net profit for the term	433,337.31
Brought over from last account ..	101,722.53
Total	535,059.84

To be distributed:

Legal reserve	22,000.00
Fund against accidents to the plant	64,210.55
Dividend at 9 per cent. per annum	270,000.00
Pension reserve... .. .	15,000.00
Carried forward to next account...	125,849.29

A proposal for the augmentation of the company's capital to 12,000,000 yen from 6,000,000 yen was referred to the meeting and the proposal was passed with unanimous vote. New shares representing the increased capital were to be issued to the original shareholders at the rate of one to every old share toward the end of August, the first instalment on them to be called September 21.

Taihoku Sugar Mill Co.—At the ordinary general meeting of shareholders the following profit and loss account was passed:—

Net profit for the half year	153,988.95
Legal reserve	9,000.00
Fund for the depreciation in the fixtures	8,500.00
Dividend at 8 per cent. per annum	120,000.00
Fees for officers... .. .	10,000.00
Pension reserve	1,200.00
Carried forward to next account ..	5,288.95

Tainan Sugar Mill Co.—At the ordinary general meeting of shareholders the following profit and loss account was passed:—

Net gains for the half year	122,525.11
Legal reserve	3,000.00
Sinking funds for fixed capital ..	5,000.00
Pension and other funds	60,000.00
Dividend at 4 per cent. per annum	40,800.00
Fees for officers... .. .	3,000.00
Carried forward to next account...	8,725.11

Taiwan Sugar Mill Co.—At the ordinary general meeting of shareholders the following profit and loss account was passed:—

Gross receipts for the term	2,300,815.60
Sinking fund for fixed capital ..	150,000.00
Balance (net gains for the term)...	2,150,815.60
Brought over from last account ..	56,707.22
Transferred from dividend equalization fund	190,000.00
Total	2,397,522.83

To be distributed:—

Legal reserve	108,000.00
Bonuses and social expenses... ..	120,000.00
Dividend at 12 per cent. per annum	2,111,400.00
Carried forward to next account...	58,122.82

MINING

Mineral Deposits of the Amur, Siberia.—M. Bordeaux, in a communication to the *Société de l'Industrie Minière*, recently described the mineral deposits of the Amur district. Outside of the quartz veins of Askold Island, gold is only found in the alluvials of the Coast Province. During the past few years the production of gold in the Vladivostok district has ranged between 1,244 and 4,416 ozs. The rivers are, however, becoming exhausted, and search is being made in the interior along the affluents of the Ussuri, and near Lake Hanka. The Askold mine, situated on an island near Vladivostok, has been worked for thirty years, and has produced about 28,000 ozs. of gold. Opposite the island on the mainland are some auriferous veins containing quartz, antimony and arsenic, but they remain unworked. During the last decade several small deposits of argentiferous galena and blende have been opened, the most important of which is at Tétinhé, 240 miles north of Vladivostok and twenty-four miles from the coast, with which it is connected by a railway. There is a little grey copper with the ores, and the richness in silver depends on the presence of the copper and galena. Six levels, totalling a length of over 2,000 fathoms, have been driven one over the other within a depth of 550 ft. Other similar accumulations of ore are worked at Tatuché, Olga, Djighit, Préobrajénie, &c. These deposits in the maritime province may be compared to those worked in the Nertchinsk district of the Trans-Baikal, where there were 448 mines, seventeen of which are important. They have been long worked in a perfunctory manner by convicts, and from 1703 to 1903 produced only 1,470,000 tons. The calamine mine at Tétinhé, near the deposit of argentiferous galena, was opened in 1907, and is now the largest mine in the Coast Province, employing more than a thousand workmen. In 1912, 80,000 tons containing 43 per cent. of zinc were exported. The sulphides of galena and blende are at the contact of porphyry and

limestone, whilst the calamine has replaced the limestone. Copper is known to exist in the Coast Province, but has been little prospected. In Siberia there is a bounty of £12 per ton on copper produced in the country, and also one of £4 per ton on lead. Chrome has been found in the Ussuri district in serpentine, and indications of mercury and platinum in the Anadyr valley.

Kailan Mining Administration.—The total output of the Administration's mines for the week ended August 22 amounted to 45,515.75 tons and the sales during the same period to 43,220.75 tons.

Week ended August 29, output 47,082.12 tons, sales 47,216.81 tons.

Week ended September 5, output 44,362.61 tons, sales 41,791.71 tons.

Week ended September 12, output 43,685.55 tons, sales 44,128.70 tons.

PERSONAL

On account of the war Dr. G. E. Morrison and Sir Richard Dane have curtailed their leave and have returned to China.

With regret we record the death of Mr. F. K. Tsao, the chief English Secretary to the Managing Director of the Tientsin-Pukow Railway.

Dr. Henry C. Adams, late Adviser to the Commission for the Unification of Railway Statistics and Accounts in China, has been given a Fifth Class Chia-ho decoration.

Lord French, the representative in China of Messrs. Pauling and Co. has gone to England on leave.

Mr. Alfred Sze, Chinese Minister to London, has left to take up his post.

Colonel Sibert and the other members of the American Red Cross Hwai River Commission have sailed for America.

Mr. A. W. U. Pope, formerly General Manager of the Shanghai-Nanking Railway, has joined the British army on the Continent as a volunteer.

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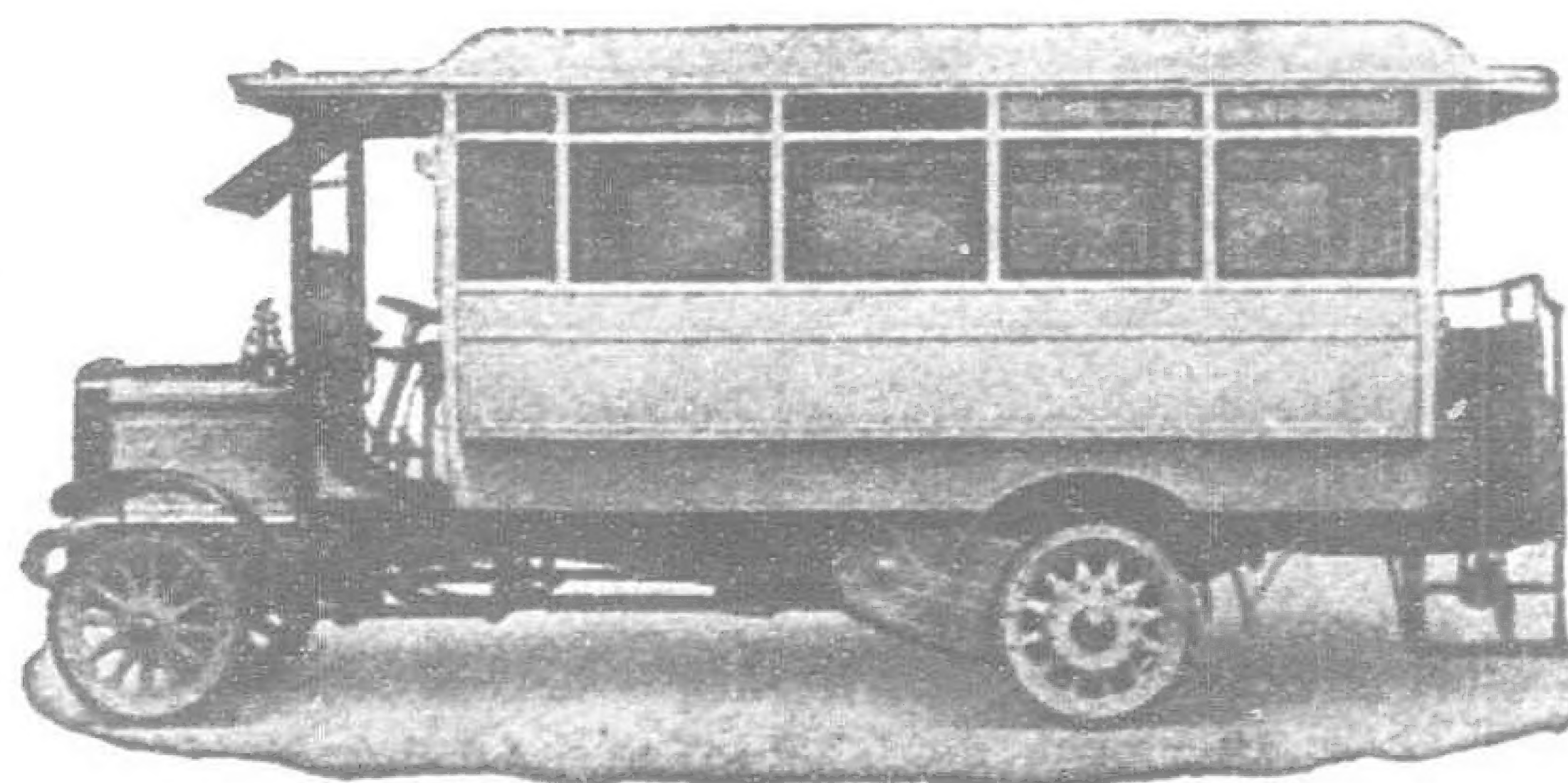
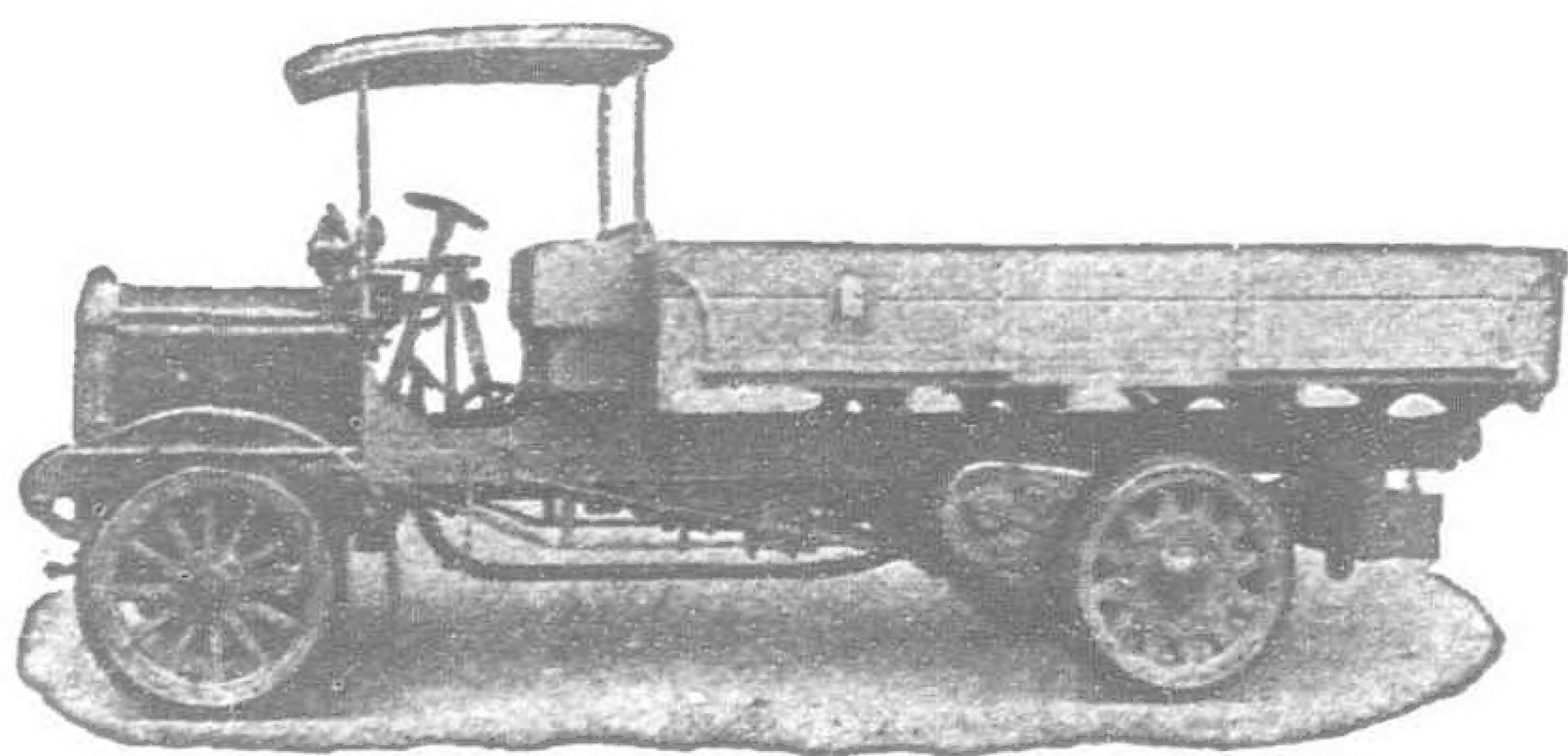


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